Panasonic

# Getting Started

## Pure IP-PBX

Model No. KX-NS1000

Thank you for purchasing this Panasonic product.
Please read this manual carefully before using this product and save this manual for future use.
In particular, be sure to read "1.2 For Your Safety (Page 5)" before using this product.

**KX-NS1000: PCMPR Software File Version 002.10000 or later**

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# Section 1
# Before Installation

# 1.1 Outline

This manual provides basic information about starting the PBX and using IP telephones.

**Note**

- In this manual, the suffix of each model number (e.g., KX-NS1000**NE**) is omitted unless necessary.
- In this manual, terms are defined as follows:

  **IP-PT**
  IP Proprietary Telephone

  **SIP extension**
  Extensions of the PBX which use Session Initiation Protocol for communication.

  **SIP phone**
  KX-UT series SIP phone
  IP conferencing phone (e.g., KX-NT700)
  Third party SIP phone (SIP hardphones/SIP softphones)

## About the Other Manuals

### User Manual

Provides operating instructions for end users using IP-PTs, SIP phones, SLTs, PSs, or DSS Consoles.

### Installation Manual

Provides instructions for installing the hardware and maintenance of the PBX.

### Feature Guide

Describes all basic, optional and programmable features of the PBX.

### PC Programming Manual

Provides step-by-step instructions for performing system programming using a PC.

## Open Source Software

This product uses Open Source Software. For details, click the Information button in Web Maintenance Console.

# 1.2 For Your Safety

To prevent personal injury and/or damage to property, be sure to observe the following safety precautions.

**The following symbols classify and describe the level of hazard and injury caused when this unit is operated or handled improperly.**

| | |
|---|---|
| ⚠ **WARNING** | This notice means that misuse could result in death or serious injury. |
| ⚠ **CAUTION** | This notice means that misuse could result in injury or damage to property. |

**The following types of symbols are used to classify and describe the type of instructions to be observed.**

This symbol is used to alert users to a specific operating procedure that must not be performed.

This symbol is used to alert users to a specific operating procedure that must be followed in order to operate the unit safely.

## ⚠ WARNING

- Proper earthing (connection to earth) is very important to reduce the risk to the user of electrocution or to protect the PBX from the bad effects of external noise in the case of a lightning strike.
- The earthing wire of the AC cable has an effect against external noise and lightning strikes, but it may not be enough to protect the PBX and to ensure electromagnetic compatibility. A permanent connection between earth and the earth terminal of the PBX must be made.
- Make sure that the AC outlet is properly earthed, then securely connect the 3-pin AC plug including the earthed pin.

## ⚠ CAUTION

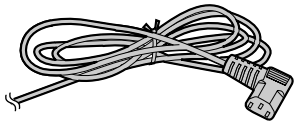
- When installing or removing the optional service cards, do not put pressure on any parts of the mother board. Doing so may result in damage to the PBX.
- Once you have started the PBX, if you unplug the PBX, do not initialise it again as described in "System Initialisation Procedure". Otherwise, your programmed data will be cleared.

- When opening the top cover, the power switch must be turned off.
- For safety reasons, close the top cover and tighten the screws before operating the PBX.
- For earthing wire, green-and-yellow insulation is required, and the cross-sectional area of the conductor must be more than 0.75 $mm^2$ or 18 AWG.
- Use only the AC power cord included with the PBX.
- Before touching the product (PBX, cards, etc.), discharge static electricity by touching ground or wearing an earthing strap. Failure to do so may cause the PBX to malfunction due to static electricity.
- When installing or removing the optional service cards, the power switch must be turned off.
- The power supply cord is used as the main disconnect device. Ensure that the AC outlet is located near the equipment and is easily accessible.

# 1.3 Unpacking

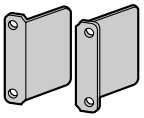
**Check the package contents.**

Main Unit × 1
CD-ROM[*1] (including manuals, etc.) × 1



AC Power Cord[*2] × 1

Screw × 6



19-inch Rack Attachment Bracket × 2

Hook Clip × 1

[*1] The number of included CD-ROMs varies according to the country/area.
[*2] The type of the AC power cord may vary depending on the country/area of use.
The KX-NS1000BX and KX-NS1000XE are supplied with 2 types of AC power cord. Please use whichever is appropriate for the country/area.

## Necessary items (not supplied):

- Earthing wire for PBX earth connection.
- Ethernet straight cables[*1] for the LAN and PC connections.
- RJ45 connectors for the LAN and PC connections by Ethernet straight cables.
- Switching hubs and routers for VoIP network configuration.

[*1] The cables should be 10BASE-T/100BASE-TX CAT 5 (Category 5) or higher, or 1000BASE-T CAT 5e (Enhanced Category 5) or higher.

## 1.3 Unpacking

# *Section 2*

# *Installation*

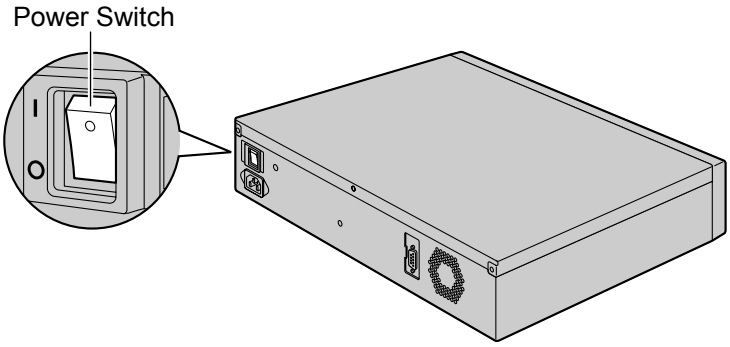
# 2.1 Opening/Closing the Top Cover

## Opening the Top Cover

### CAUTION

When opening the top cover, the power switch must be turned off.

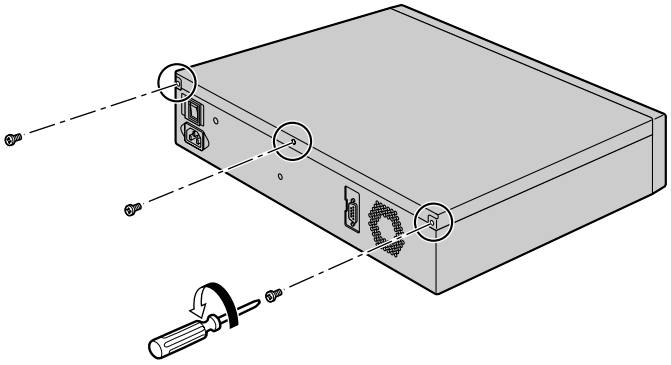
1. Confirm that the power switch is turned off.



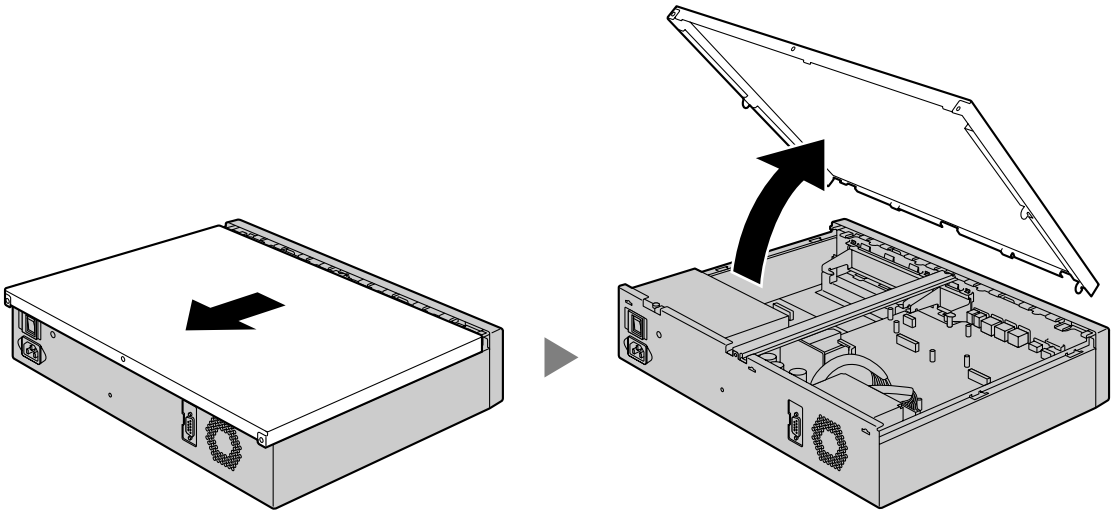

**Note**

In order to turn off the PBX's power, a system shutdown using Web Maintenance Console must first be performed. For details, refer to "5.5 System Control—System Shutdown" in the PC Programming Manual.

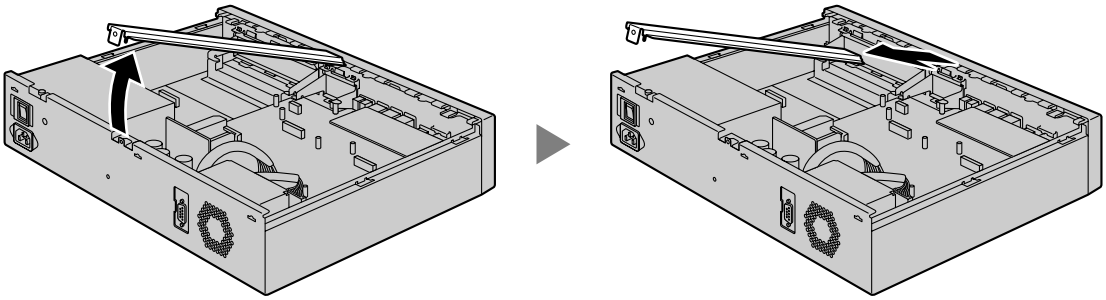
2. Turn the screws anticlockwise to loosen.



3. Slide the top cover then lift it off.

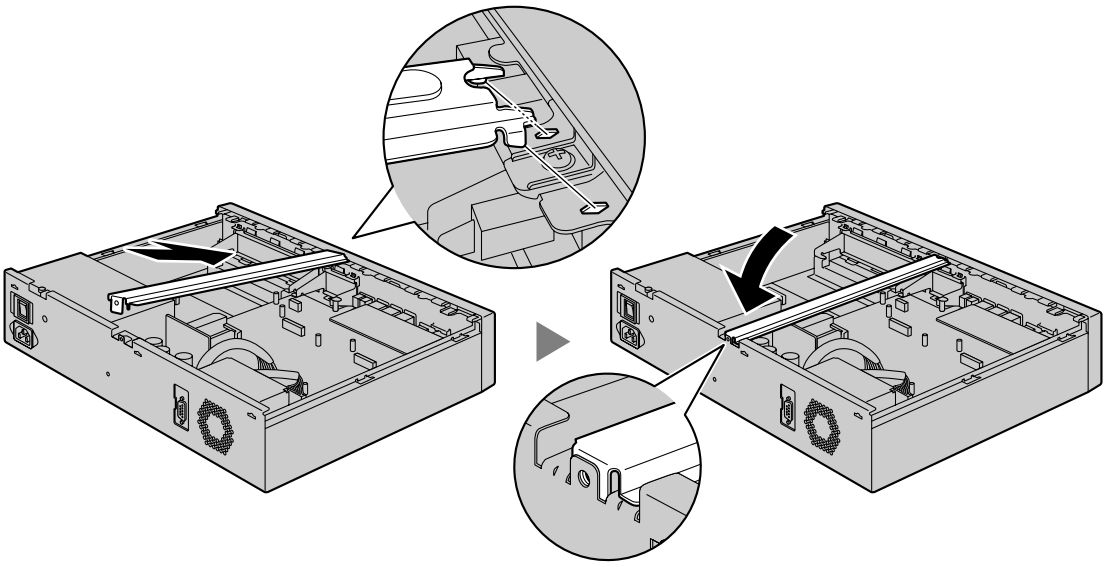


4. Remove the support bar from the PBX.

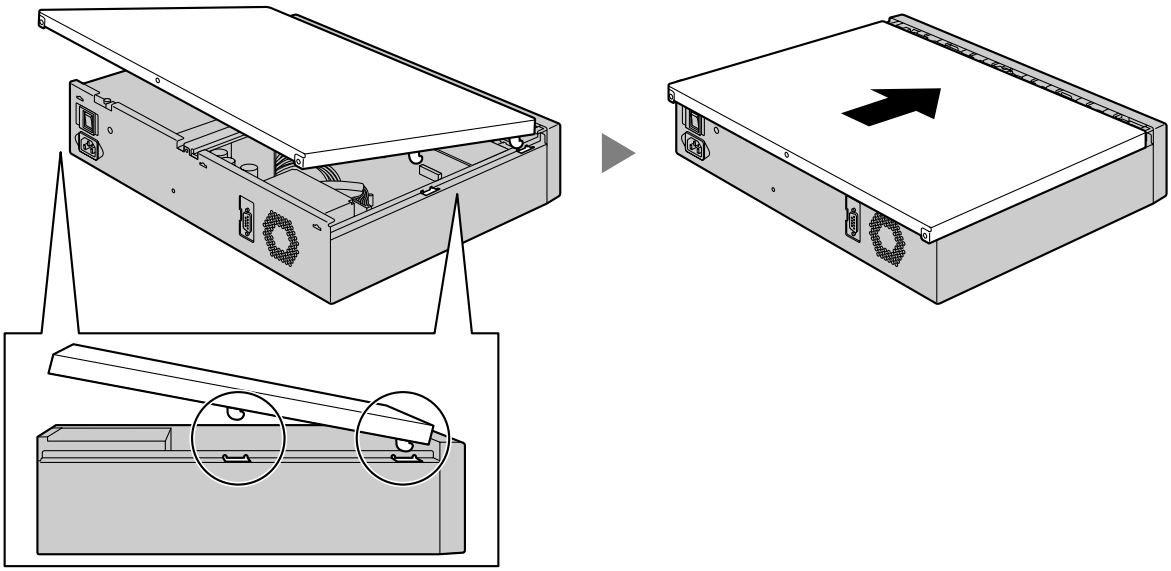


## Closing the Top Cover

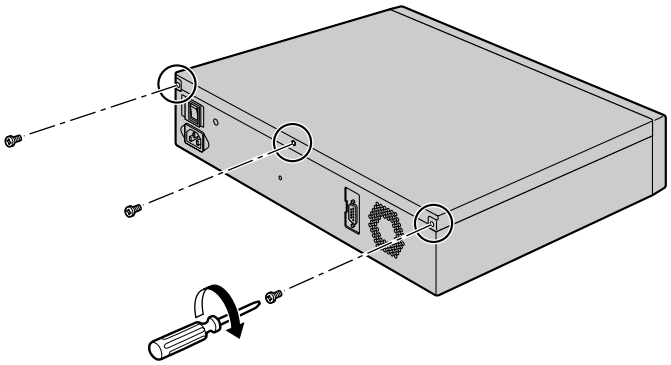
1. Place the support bar onto the PBX.



**2.** Place the top cover onto the PBX. Then slide the top cover until it closes properly.



**3.** Turn the screws clockwise to tighten.



**CAUTION**

For safety reasons, close the top cover and tighten the screws before operating the PBX.

# 2.2 Installing DSP Cards

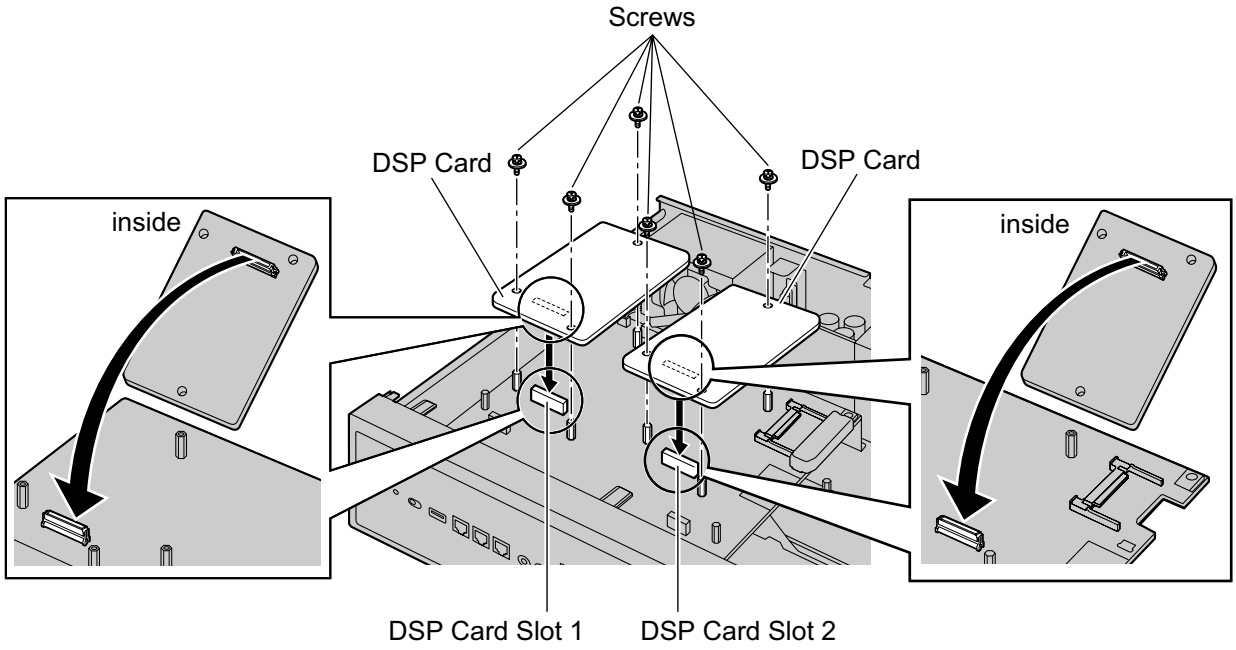
**CAUTION**

- Before touching the product (PBX, cards, etc.), discharge static electricity by touching ground or wearing an earthing strap. Failure to do so may cause the PBX to malfunction due to static electricity.
- When installing or removing the optional service cards, the power switch must be turned off.
- When installing or removing the optional service cards, do not put pressure on any parts of the mother board. Doing so may result in damage to the PBX.

**Note**

Make sure the AC power cord is not connected to the AC inlet of the PBX.

A DSP card is a digital signal processor card with DSP resources that can be used for VoIP calls, conferences, the Unified Messaging feature, and the DISA/OGM feature. The DSP cards are compliant with ITU-T G. 729A and G.711 codec methods.
Depending on the amount of your DSP resource needs, DSP S, DSP M, or DSP L cards can be installed. Up to 2 DSP cards can be installed on the mother board.
To operate the PBX, at least one DSP S, DSP M, or DSP L card must be installed in one of the DSP card slots.

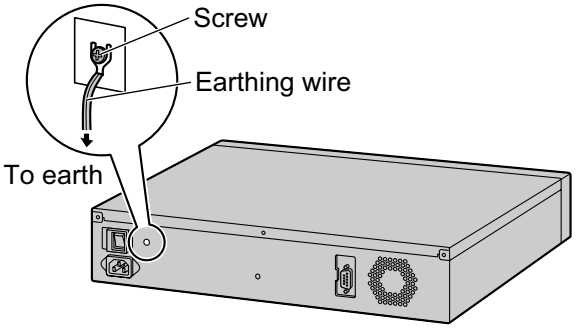



**Note**

- The DSP Resource Advisor can be used to calculate DSP resource usage easily. For details, refer to "9.34.1.1 PBX Configuration—[1-5-1] Configuration—DSP Resource—Setting—DSP Resource Advisor" in the PC Programming Manual.
- For details about the number of resources provided by each type of DSP card, refer to "4.3.3 DSP S Card (KX-NS0110), DSP M Card (KX-NS0111), DSP L Card (KX-NS0112)" in the Installation Manual.
- For information about installing other optional service cards, refer to the Installation Manual.

# 2.3 Frame Earth Connection

1. Loosen the screw.
2. Insert an earthing wire (user-supplied).
3. Tighten the screw.
4. Connect the earthing wire to earth.




**WARNING**

- **Proper earthing (connection to earth) is very important to reduce the risk to the user of electrocution or to protect the PBX from the bad effects of external noise in the case of a lightning strike.**
- **The earthing wire of the AC cable has an effect against external noise and lightning strikes, but it may not be enough to protect the PBX and to ensure electromagnetic compatibility. A permanent connection between earth and the earth terminal of the PBX must be made.**

**CAUTION**

For earthing wire, green-and-yellow insulation is required, and the cross-sectional area of the conductor must be more than 0.75 $mm^2$ or 18 AWG.

**Notice**

Be sure to comply with applicable local regulations (e.g., laws, guidelines).

# 2.4 LAN Connection

## 2.4.1 LAN Connection for the Main Unit

### Connecting the Main Unit to the LAN

When the PBX is connected to the LAN for the first time, you must assign IP addressing information to the PBX. Refer to "4.1 Programming the PBX" for instructions.

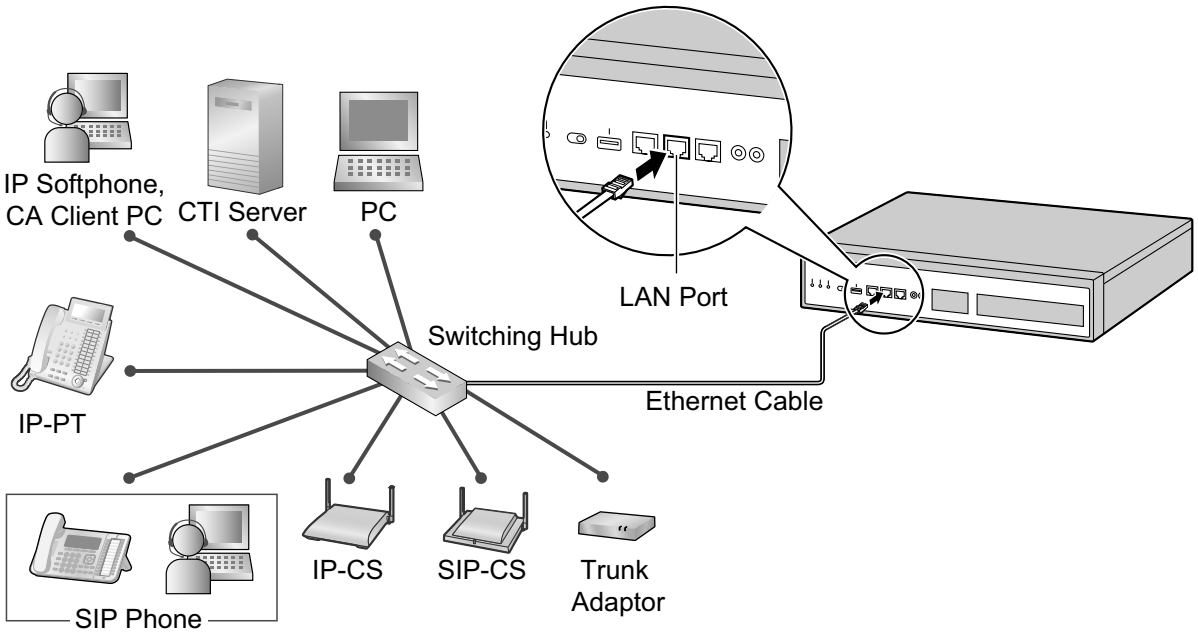
**Note**

Make sure to set the port of the switching hub that connects to the PBX to operate under "Auto Negotiation" mode.

### Connecting the PBX to a Switching Hub

1. Connect the cable to the LAN port of the PBX.

**2.** Connect the other end of the cable to the switching hub.




**Connection for 10BASE-T/100BASE-TX**

| Switching Hub | | PBX (LAN Port) | |
|---|---|---|---|
| Signal Name | Pin No. | Pin No. | Signal Name |
| TX+ | 1 | 1 | RX+ |
| TX- | 2 | 2 | RX- |
| RX+ | 3 | 3 | TX+ |
| RX- | 6 | 6 | TX- |

# 2.4.2 LAN Connections for IP Telephones

When an IP telephone is connected to the LAN and power is supplied for the first time, you will be prompted to set network parameters. The network parameters must be set for the IP telephone before it can be used. Refer to "4.3 Assigning Networking Information to IP Telephones" for instructions.

## Connecting an IP Telephone to a Switching Hub

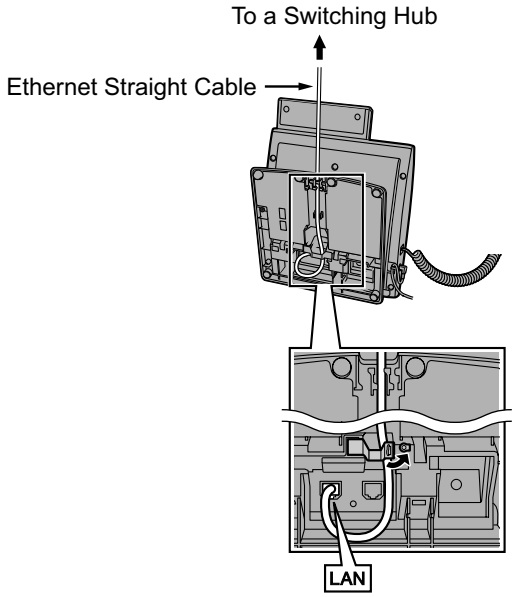
When connecting an IP telephone to the LAN, connect it to a switching hub.

**Note**

Since an IP softphone is installed and operates on a PC, the PC must be connected to the LAN to use the IP softphone on the network.

The diagram below is for connecting an IP-PT to a switching hub. For SIP phones, refer to the documentation of your SIP phone.

**Example: KX-NT346**



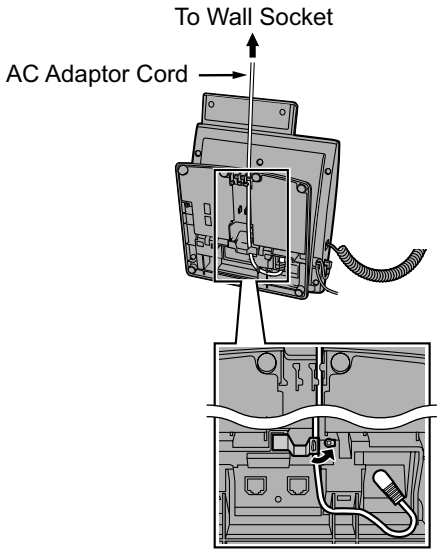
## Connecting an AC Adaptor to an IP Telephone

IP-PTs and some SIP phones comply with the IEEE 802.3af Power-over-Ethernet (PoE) standard. If PoE is available on your network, these IP telephones can receive the necessary power supply from the network through the network cable. In this case, no AC adaptor is needed for the IP telephones.
However, if PoE is not available, you will need to connect an AC adaptor to the IP telephone.

**Note**

Use only the specified type of AC adaptor for each IP telephone. For details, refer to the documentation of your IP telephone.

**Example: KX-NT346**



### 2.4.2 LAN Connections for IP Telephones

# Section 3

# Before Programming

# 3.1 Starting the KX-NS1000

**WARNING**

**Make sure that the AC outlet is properly earthed, then securely connect the 3-pin AC plug including the earthed pin.**

**CAUTION**

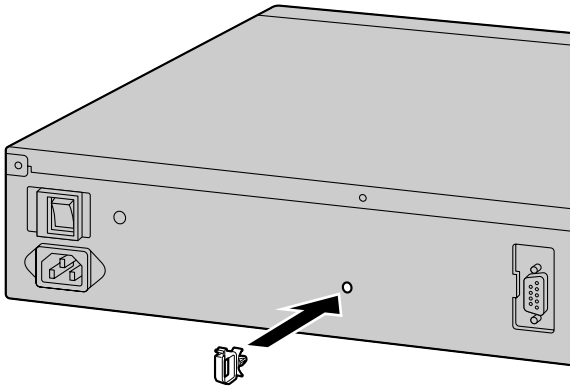
- Use only the AC power cord included with the PBX.
- Before touching the product (PBX, cards, etc.), discharge static electricity by touching ground or wearing an earthing strap. Failure to do so may cause the PBX to malfunction due to static electricity.
- Once you have started the PBX, if you unplug the PBX, do not initialise it again as described in "System Initialisation Procedure". Otherwise, your programmed data will be cleared.
- The power supply cord is used as the main disconnect device. Ensure that the AC outlet is located near the equipment and is easily accessible.

**Note**

An Uninterruptible Power Supply (UPS) can be connected to the PBX. A UPS provides temporal power to the PBX in the event of power failure. If the recommended UPS is connected to the PBX and a power failure occurs, the PBX can perform automatic shutdown to prevent data loss or corruption when the UPS battery ratio is at a specified rate. For more information about UPSs, refer to the Installation Manual.

## Installing the Hook Clip for the AC Power Cord

1. Insert the hook clip into the hook clip hole.



**Note**

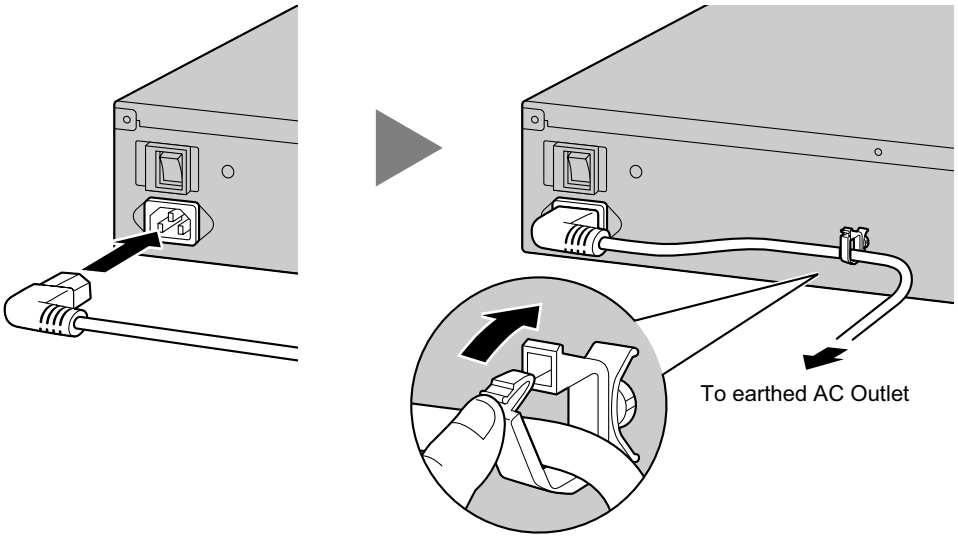
Use only the hook clip included with the PBX.

## Connecting the AC Power Cord

1. Plug the AC power cord into the PBX and pass the cord through the hook clip as indicated. Push the hook clip in the direction of the arrow until it clicks.

   **Note**

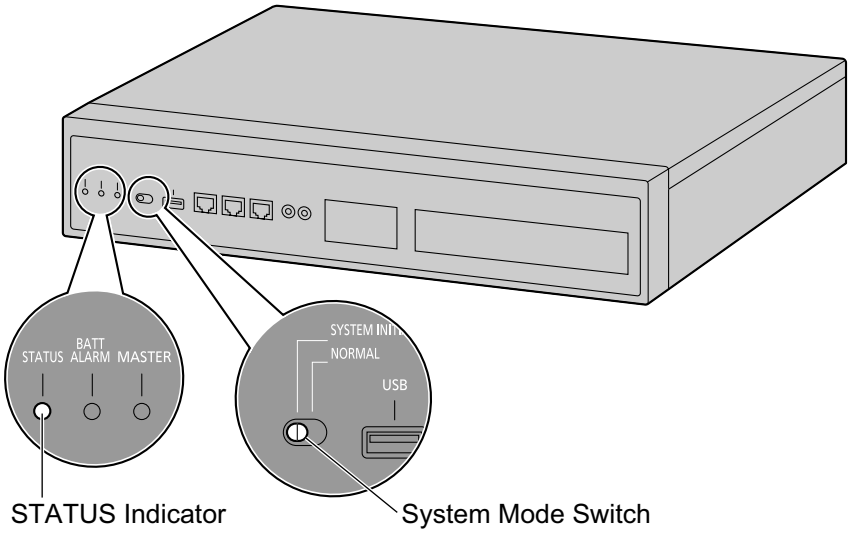
   For safety reasons, do not stretch or pinch the AC power cord.




2. Plug the other end of the cord into an AC outlet.

## System Initialisation Procedure

1. Slide the System Mode Switch to the "SYSTEM INITIALIZE" position.




2. Turn on the power switch of the PBX. The STATUS indicator will flash green.

3. While the STATUS indicator is flashing green, slide the System Mode Switch back to the "NORMAL" position. Depending on the configuration, initialisation takes about 2.5 minutes. If successfully executed, the STATUS indicator will stop flashing and remain lit up.

   **Note**

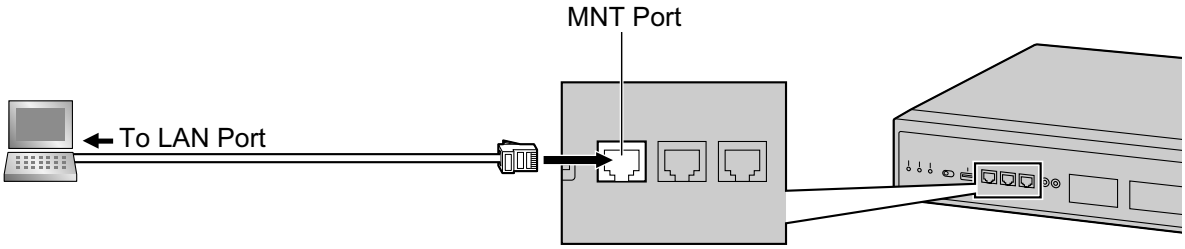
   For details about LED indications, refer to "4.3.1 Mother Board" in the Installation Manual.

All data, except for system prompts and activation key files, will be erased. Data that is erased includes Unified Messaging data, call logs, etc. The settings for the PBX as well as all optional service cards will be initialised to their default values.

# 3.2 PC Connection

Web Maintenance Console serves as an overall system programming tool for the PBX. The Web Maintenance Console's Easy Setup Wizard lets you easily configure the PBX to apply installation settings to enable communication on an IP network.
To programme the PBX, connect it to the PC via the MNT port or LAN port.
When connecting the PBX via a Virtual Private Network or the Internet, refer to "5.2 PC Connection" in the Installation Manual.

## Direct Connection




**Notice**

- When connecting the PC to the MNT port, if the PC is set to obtain the IP address automatically, the IP address of the PC will be set to an appropriate IP address to establish a connection to the PBX.
- When connecting to the MNT port for more than 24 hours, the "Operation Failed" error occurs. In this case, log in to Web Maintenance Console again.

**Note**

Use an Ethernet cable with an RJ45 connector to connect a PC to the PBX.

### Pin Assignments

**LAN (RJ45 Cable)**

10BASE-T/100BASE-TX

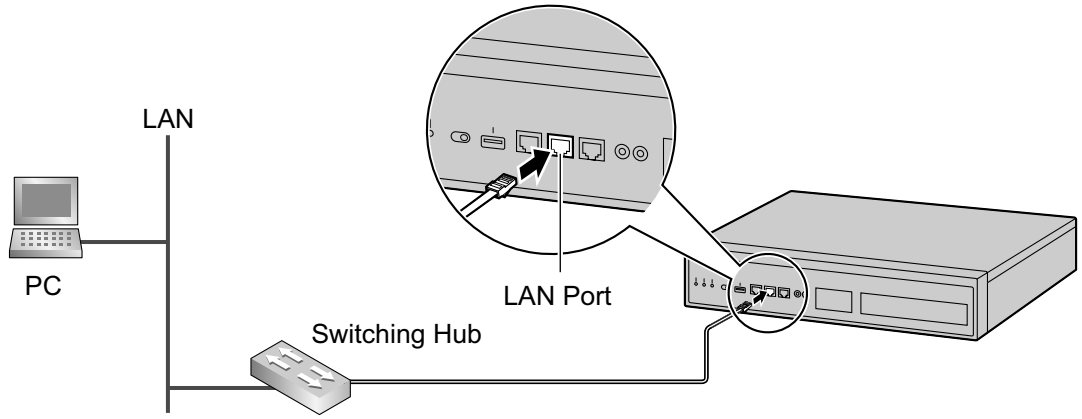
| LAN Port (PC) | MNT Port (PBX) |
|---|---|
| Pin No. | Pin No. |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 6 | 6 |

1000BASE-T

| LAN Port (PC) | MNT Port (PBX) |
|---|---|
| Pin No. | Pin No. |
| 1 | 1 |
| 2 | 2 |
| 3 | 3 |
| 4 | 4 |
| 5 | 5 |
| 6 | 6 |
| 7 | 7 |
| 8 | 8 |

You can use 1000BASE-T cables for 10BASE-T/100BASE-TX connections.

# Connection via LAN




**Note**

For details about LAN connection, refer to "4.11.1 LAN Connection for the Main Unit" in the Installation Manual.

# 3.3 Starting Web Maintenance Console

## System Requirements

For the system requirements of the PC (operating system, hardware specifications, supported browsers etc.), refer to "5.3 Starting Web Maintenance Console" in the Installation Manual.

## Connecting to Web Maintenance Console

**Note**

The contents and design of the software are subject to change without notice.

1. Connect the PC to the PBX:
   - Connect the PBX to a PC with the MNT port and access the PBX directly from the PC. For details, refer to "Direct Connection" in "3.2 PC Connection".
   - Connect the PBX to a network with the LAN port and access the PBX from a PC in your LAN. For details, refer to "4.11.1 LAN Connection for the Main Unit" in the Installation Manual.
2. Access Web Maintenance Console:

   ### MNT Port Connection:

   Launch your Web browser and in the address bar, enter one of the following addresses exactly as shown:
   – **223.0.0.1**
   or
   – **http://kx-ns1000.**

   **Note**

   - If entering "**http://kx-ns1000.**", be sure to include the period at the end as shown.
   - When connecting to the MNT port for more than 24 hours, the "Operation Failed" error occurs. In this case, log in to Web Maintenance Console again.
   - The default subnet mask for the MNT port is 255.255.255.0.

   ### LAN Connection:

   Launch your Web browser and input the IP address of the PBX followed by the Web Maintenance Console port number into the address bar. The input method will differ according to the PC's connection to the PBX. The default IP address for the LAN port of the PBX is 192.168.0.101, and the default Web Maintenance Console port number is 80. Therefore the address to enter to connect to the PBX for the first time will be as follows (enter the address exactly as shown):
   **http://192.168.0.101**

   **Note**

   The default subnet mask for the LAN port is 255.255.255.0.
3. The Web Maintenance Console login screen is displayed. Log in with the Installer level account name and the default Installer level account password to launch the Easy Setup Wizard. For details about the Easy Setup Wizard, see "4.1.1 Easy Setup Wizard".

## Using Web Maintenance Console in Off-line Mode

You can connect a PC to the PBX to programme the PBX using Web Maintenance Console (On-line mode), or you can programme the PBX without connecting the PC to the PBX (Off-line mode).
Off-line mode programming is performed using the Off-line version of Web Maintenance Console, which you install on your PC. The changes made during Off-line mode are saved as local data on the PC, and then later uploaded to the PBX.
The following procedures outline how to install the Web Maintenance Console for Off-line mode programming.

## Installation

**Note**

- Be sure to install the latest version of KX-NS1000 Off-line WEB-Maintenance Console.
- Before beginning the installation of Off-line Web Maintenance Console, the following software must be installed on the PC:
  – Microsoft .NET Framework 2.0
  – Microsoft .NET Framework 4
  This software can be downloaded from Microsoft's online Download Centre.
- To install or uninstall the software on a PC running Windows XP Professional, you must be logged in as a user in either the "Administrators" or "Power Users" group.
- To install or uninstall the software on a PC running Windows Vista Business, Windows 7, Windows 7 Professional, Windows 8, Windows 8 Professional, you must be logged in as a user in the "Administrators" group.

1. Copy the KX-NS1000 Off-line WEB-Maintenance Console setup file to your PC.
2. Double-click the setup file to run the installer.
3. Follow the on-screen instructions provided by the installation wizard.

**Note**

For information about programming the PBX in Off-line mode, refer to the PC Programming Manual.

# Section 4
# Programming

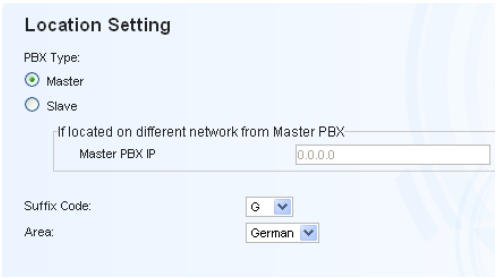
# 4.1 Programming the PBX

## 4.1.1 Easy Setup Wizard

In the Easy Setup Wizard, you will set up the mandatory settings required for the PBX.
When you log in to Web Maintenance Console for a PBX that is in its initialised, factory default state, the Easy Setup Wizard for that PBX will launch automatically. You must log in using the Installer level account name and password.

– The Installer level account name is "INSTALLER".
– The default Installer level account password is "1234".

1. After Easy Setup Wizard launches, select a language, and then click **Install**.
2. In **Location Setting**:




**a.** Select a **PBX Type**:
- **Master**: Select for a PBX that will be registered as the Master unit of One-look network. Also select for a stand-alone PBX that will not be used in a One-look network.
- **Slave**: Select for a PBX that will be registered as a Slave unit of a One-look network. If **Slave** is selected, go to step **2-d** below.

**Note**

- If the Master unit is located on a different LAN than the Slave unit being registered, the Slave unit will not be able to automatically detect the Master unit for registration. The IP address of the Master unit must be specified. Enter the IP address of the Master unit in **If located on different network from Master PBX**.
- For information about stand-alone PBXs and PBXs in a One-look network, refer to "2.1.1 System Configurations" in the Installation Manual.

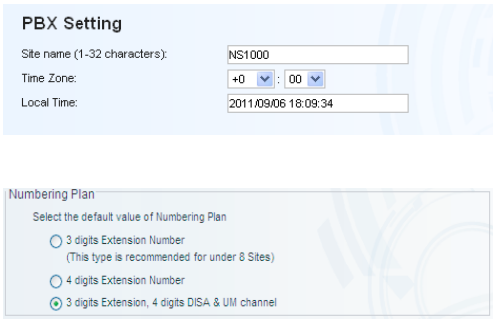
**b.** Select a **Suffix Code**[*1] from the drop-down list if **Master** is selected for **PBX Type**.
**c.** Select an **Area**[*1] from the drop-down list if **Master** is selected for **PBX Type**.
**d.** Click **Next**.

**Note**

If **Suffix Code** is changed from its default value, a notice about restarting the PBX is displayed. Click **OK** to restart the PBX. After the PBX restarts, start Web Maintenance Console again (refer to "3.3 Starting Web Maintenance Console"). When you start the Easy Setup Wizard again, you will start from step **3**, below.

[*1] For information about Suffix Codes and Areas to select, refer to "9.1 PBX Region Suffix Codes and Areas" in the Installation Manual.

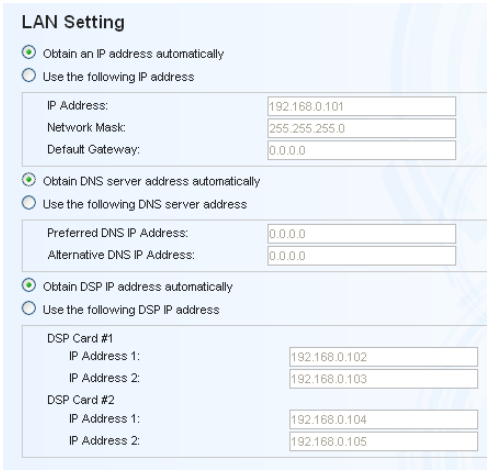
**3.** In **PBX Setting**:




**a.** Specify a **Site name** if **Master** was selected for **PBX Type** in step **2**.
**b.** Select a **Time Zone** from the drop-down list.
**c.** Click the **Local Time** box and select the date and time from the menu.
**d.** Select an option for **Select the default value of Numbering Plan**.
**e.** Click **Next**.

**4.** In **LAN Setting**, the IP addresses for the PBX, DNS server, and DSP cards can be assigned automatically through a DHCP server or entered manually.

**When using a DHCP server:**



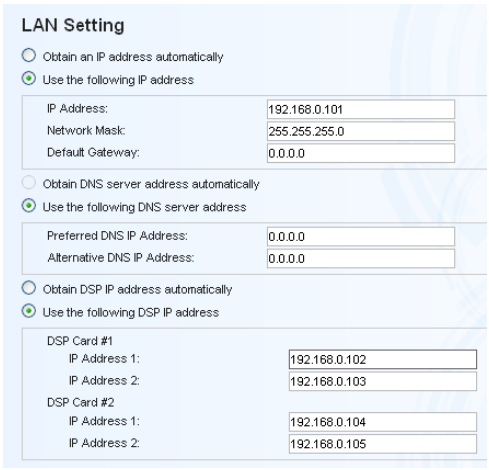

**a.** Select **Obtain an IP address automatically**.
**b.** Select **Obtain DNS server address automatically**.
**c.** Select **Obtain DSP IP address automatically**.

**Notice**

The boxes will turn grey and the IP address information will be assigned automatically. Write down the address information assigned to the PBX for future reference.

**d.** Click **Next**.

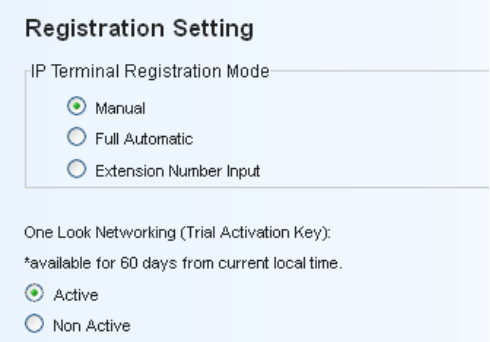
**When not using a DHCP server:**




**a.** Select **Use the following IP address**.
**b.** Enter an IP address*1, Subnet Mask*2, and Default Gateway*1. (The default gateway may not need to be specified depending on your network configuration.)
**c.** Select **Use the following DNS server address**.
**d.** Enter the preferred and alternative DNS IP addresses*1.
**e.** Select **Use the following DSP IP address**.
**f.** Enter up to 2 IP addresses*1 for each installed DSP card.
**g.** Click **Next**.

*1 Valid IP address range: "1.0.0.0" to "223.255.255.255"
*2 Valid subnet mask address range: "0–255.0–255.0–255.0–255" (except "0.0.0.0" and "255.255.255.255")

**5.** In **Registration Setting**, the **IP Terminal Registration Mode** and the **One Look Networking (Trial Activation Key)** can be set.




**a.** Select the **IP Terminal Registration Mode**:
- **Manual**: Select this mode to manually register IP terminal information.
- **Full Automatic**: Select this mode to automatically register IP terminal information.
- **Extension Number Input**: Select this mode to automatically register IP terminal information except its extension number. The extension number can then be registered from the IP telephone manually.

**Note**

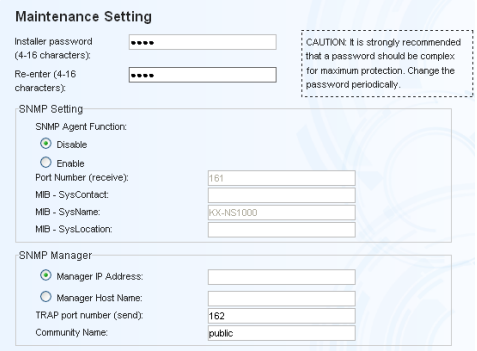
- Full Automatic and Extension Number Input registration methods may not be available for certain types of IP terminals. In such cases, select the Manual registration method.
- For more information about the IP terminal registration modes, refer to "4.3.2 Registering IP Telephones".

**b.** For **One Look Networking (Trial Activation Key)**, specify whether to activate the 60-day One-look Networking Trial Activation Key.
- If **Active** is selected, the 60-day trial will begin when the Easy Setup Wizard is completed.
- If **Non Active** is selected, you will have to activate the trial manually in order to use One-look Networking Features on a trial basis.

**c.** Click **Next**.
If **Slave** has been selected in step **2**, the Easy Setup Wizard will finish at this step. If LAN settings have been changed from their default values in step **4**, you will be prompted to restart the PBX. Click **OK** to restart the PBX.
To add the PBX as a Slave unit PBX to the One-look network, use the Add Site Wizard from the Master unit PBX's Home Screen.

**6.** In **SNTP / Daylight Saving**, enter information for **Automatic Time Adjustment** and **Daylight Saving**, and then click **Next**.

**7.** In **Maintenance Setting**, the **Installer password**, information for **SNMP Setting** and **SNMP Manager** can be entered.



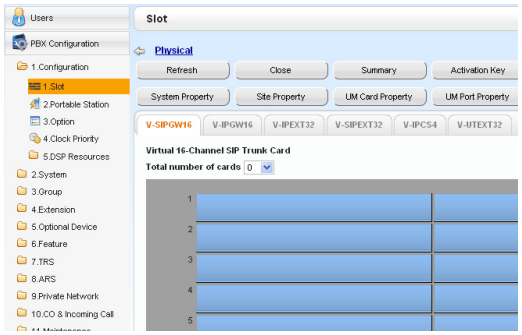

**a.** Enter a password for the Installer level account in **Installer password**. Confirm your input in **Re-enter**.
**b.** Specify settings for **SNMP Setting** and **SNMP Manager** if necessary. If you are unsure of your network's SNMP settings, contact your network's administrator.
**c.** Click **Finish**.

**8.** Follow the prompts of the Easy Setup Wizard. After the Easy Setup Wizard is completed, if LAN settings have been changed from their default values in step **4**, you will be prompted to restart the PBX. Click **OK** to restart the PBX. Otherwise, the login screen will be displayed.
**9.** Log in with the Installer level account using the password entered during Easy Setup Wizard.
The Home Screen is displayed. You may now begin programming the PBX.

**Notice**

- Do not change the IP address of the PBX once IP telephones are registered to the PBX using the set IP address. The IP telephones will not operate properly if the IP address of the PBX is changed. When an external DHCP server is used to automatically assign IP addresses, it must be configured to always allocate the same IP address to the PBX. For details, consult your network administrator.
- If an external DHCP server is in use, it must be able to use a "client identifier" option specified by RFC 2131.
- The PBX will not start properly if IP addresses cannot be assigned automatically by the DHCP server when the PBX has been set to obtain IP addresses automatically. In this case, you need to consult your network administrator because the DHCP server in your network may not be running or a network failure may have occurred. If the DHCP server is not available, enter IP addresses manually, then restart the PBX. If the PBX cannot be accessed over the network, connect the PC directly to the PBX with an Ethernet cable and access Web Maintenance Console using a direct connection.
For details about connecting the PC directly to the PBX, refer to "Direct Connection" in "3.2 PC Connection".

## 4.1.2 Installing the Virtual IP Cards to the PBX




1. a. Click **Setup** → **PBX Configuration** → **Configuration** → **Slot**.
   b. Click **Virtual**.
2. a. Click on the name of the desired virtual card tab.
   b. From the **Total number of cards** drop-down list, select the desired number of cards.
3. A confirmation message will be displayed. Click **OK**.

## 4.1.3 Installing Additional Activation Keys

When the number of preinstalled activation keys is not enough for the desired configuration or when you wish to use enhanced features, additional activation keys in the form of activation key files can be installed using Web Maintenance Console.

### Activation Key Code and Key Management System

To obtain additional activation keys, you need to purchase the appropriate activation key codes and access the Key Management System. You can download the activation keys as an activation key file from the Key Management System. To download the activation keys, enter the MPR ID number shown on the back of the main unit, and activation key number and registration ID provided on each activation key code.

**Note**

For information about the types of activation keys, refer to "3.1 Information about the Activation Keys" in the Installation Manual.

### Installing the Activation Key Files

1. Log in to Web Maintenance Console using the Installer level account.
2. Click **Maintenance** → **Utility** → **Activation Key Installation**.
   **Activation Key Installation** window will be displayed.
3. Click **Browse** and specify the directory where the activation key files are stored, and click **Open**.
4. A list of activation key files stored in the specified directory is displayed. Check the boxes next to the activation keys to install to the PBX, and click **Install**.
5. The activation keys will be copied to the Master unit, and then the activation keys that Slave units require will be copied to the Slave units of the One-look network. When installation is complete, the message, "The activation key has been installed and activated successfully!" is displayed.
6. Click **Apply**.

**Notice**

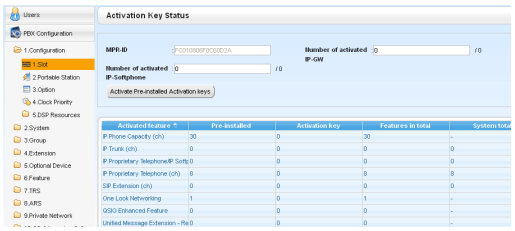
The activation key file can only be installed in the PBX with the MPR ID number entered when the activation key file was downloaded. The activation key file cannot be reissued unless the mother board crashes.

**Note**

You can click the provided link to directly access activation key information and programme the number of activated IP trunks and IP softphones.

# Configuration of the Activation Keys

Depending on your configuration, it may be necessary to programme the number of provided IP Trunk channels to be used for H.323 trunks. By default, all of the provided IP Trunk channels will be used for SIP trunks. Similarly, you can programme how many IP softphone(s) can be used through the IP Softphone/IP Proprietary Telephone activation key. By default, only IP softphone(s) can be used through the IP Softphone/IP Proprietary Telephone activation key.




1. **a.** Click **Setup** → **PBX Configuration** → **Configuration** → **Slot**.
   **b.** Click **Activation Key**.
2. **a.** In **Number of activated IP-GW**, type the number of IP Trunk channels to be used for H.323 trunks.

   **Note**

   If you have changed the value for **Number of activated IP-GW**, you must click **Execute** to restart the V-IPGW cards for the change to take effect.

   **b.** In **Number of activated IP-Softphone**, type the number of IP softphones to be used through the IP Softphone/IP Proprietary Telephone activation key.
3. Click **OK**.

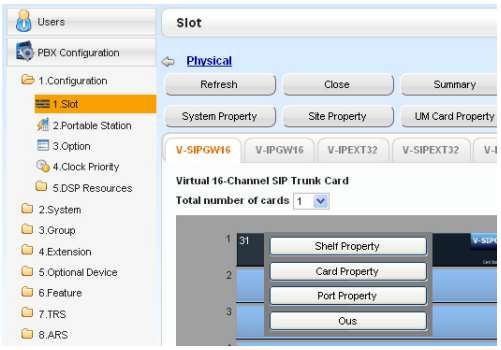
**Note**

For a detailed explanation about activation keys, refer to "3.1 Information about the Activation Keys" in the Installation Manual.

# 4.2 Programming SIP Trunks

The Virtual 16-Channel SIP Trunk Card (V-SIPGW16) is a virtual trunk card which is designed to be easily integrated into an Internet Telephony Service provided by an ITSP (Internet Telephony Service Provider). For information about SIP trunks, refer to "8.3 SIP Trunks" in the Installation Manual.

## Accessing Port Properties




1. Click **Setup** → **PBX Configuration** → **Configuration** → **Slot**.
2. Click **Virtual**.
3. Move the mouse pointer over the V-SIPGW16 card to display the menu of options, and then click **Ous**.
4. Move the mouse pointer over the V-SIPGW16 card to display the menu of options again, and then click **Port Property**.

## Programming Port Properties

### Automatic Programming

Some of the parameters can be automatically programmed by selecting the desired SIP provider for each virtual SIP gateway port. Available SIP providers can be selected, and a different SIP provider can be assigned to each virtual SIP gateway port.

**Note**

It is necessary to import a SIP provider list file (comma-separated value [CSV] file) in advance to use the automatic programming feature.

Follow the steps below to configure a SIP provider.

1. Click **Select Provider**.
   A dialogue box will appear. Available virtual SIP gateway port numbers are displayed in the list.
2. From the **Provider** drop-down list, select the desired SIP provider.

   **Note**

   If the desired SIP provider is not shown in the drop-down list, it is necessary to programme the desired parameters manually. For information about the manual programming procedure, refer to "Manual Programming" below.
3. Highlight the desired port numbers or click **Select All** to select all the virtual SIP gateway port numbers to be assigned to the SIP provider selected in step **2**.
4. Click **Execute**.
   Appropriate setting values designated by the SIP provider will be set in the parameters for the virtual SIP gateway ports.

### Manual Programming

Manual programming is compulsory for the following parameters:
Follow the steps below to programme the parameters which are not automatically programmed by selecting a provider.

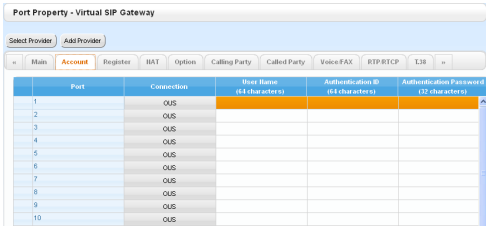
1. Click the desired tab.
2. Enter information or select settings from the drop-down list for each parameter.

## Parameters that Require Manual Programming

Manual programming is compulsory for the following parameters:

- **User Name**: Specifies the user name (SIP Account) provided by the SIP provider. (Max. 64 characters)
- **Authentication ID**: Specifies the authentication ID required for registration with the SIP server. (Max. 64 characters)
- **Authentication Password**: Specifies the authentication password used for registration with the SIP provider. (Max. 32 characters)

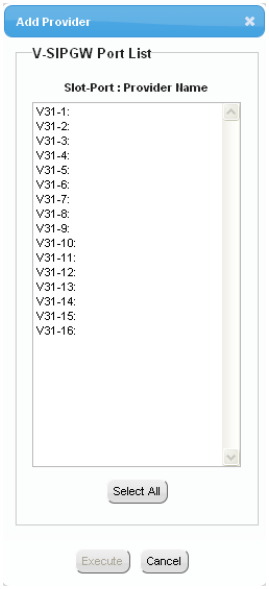
Follow the steps below to programme these 3 parameters.




1. Click an **Account** tab.
2. In the **User Name** column, enter the user name provided by the SIP provider.
3. In the **Authentication ID** column, enter the authentication ID required for registration with the SIP server.
4. In the **Authentication Password** column, the authentication password used for registration with the SIP provider.
5. Click **OK**.

## Adding Settings to Provider Profiles

Follow the steps below to add the settings to provider profiles.




1. Click **Add Provider**.
   A dialogue box will appear. Available virtual SIP gateway port numbers are displayed in the list.
2. Highlight the desired port numbers or click **Select All** to select all the virtual SIP gateway port numbers to add the settings to provider profiles.
3. Click **Execute**.

**Note**

For more details about SIP gateway port settings, refer to the PC Programming Manual.

# 4.3 Assigning Networking Information to IP Telephones

## 4.3.1 Assigning IP Addressing Information

The IP address of an IP telephone, the subnet mask address, the default gateway address, and the PBX's IP address must be assigned to the IP telephone before it can be used on the network. These IP addressing information can be assigned in the following ways;

### For IP-PTs

- **Using a DHCP server (DHCP Server feature or an external DHCP server) when the IP-PT is on the same LAN as the PBX**
  The DHCP server automatically assigns the IP address of the IP-PT, the subnet mask address, and the default gateway address to the IP-PT.
  The PBX's IP address can also be assigned automatically to the IP-PT in the process of being registered to the PBX. For details about registering the IP-PT, refer to "4.3.2 Registering IP Telephones".

  **Note**

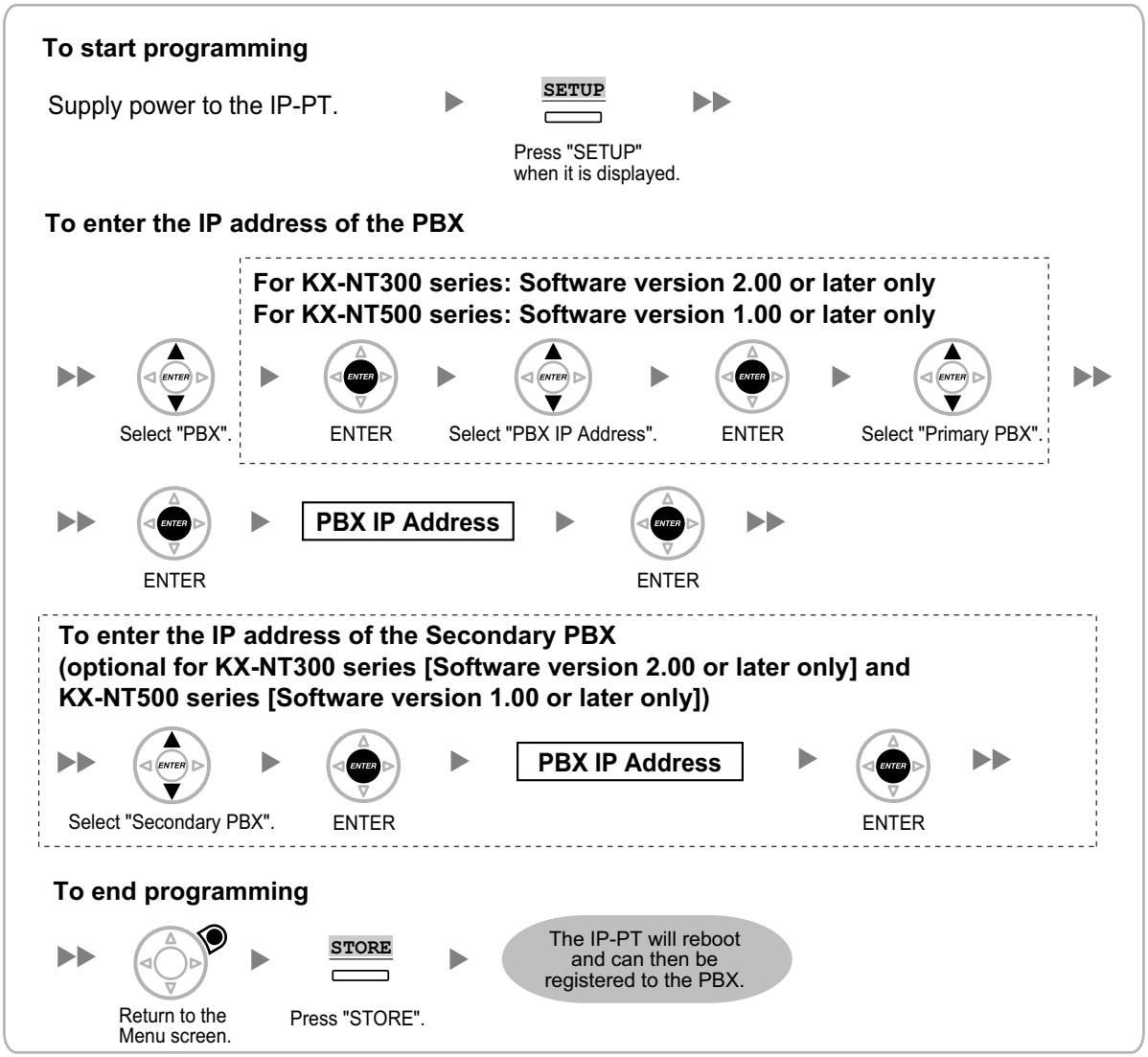
  For information about the DHCP Server feature, refer to "8.1.2 DHCP (Dynamic Host Configuration Protocol) Server" in the Installation Manual.

- **Using a DHCP server (DHCP Server feature or an external DHCP server) when the IP-PT is on a remote office LAN**
  While the DHCP server automatically assigns the IP address of the IP-PT, the subnet mask address, and the default gateway address to the IP-PT, the PBX's IP address must be assigned manually.
  Follow the procedure below to assign the PBX's IP address.

  **Note**

  - By assigning the PBX's IP address to one IP-PT, it is possible to assign the PBX's IP address to other IP-PTs or IP Cell Station Units (IP-CSs) on the same LAN through system programming. For details, refer to "9.15 PBX Configuration—[1-1] Configuration—Slot—V-IPEXT32—Port Property—Option—◆ ANNOUNCE Mode" in the PC Programming Manual.
  - IP-PTs can only receive IP addressing information from a DHCP server on its own LAN. Therefore, when IP-PTs are located on several LANs, a DHCP server is required on each LAN.
  - Since the default setting of the DHCP client function is enabled for IP-PTs, simply connect the IP-PTs to the LAN to use the DHCP server.

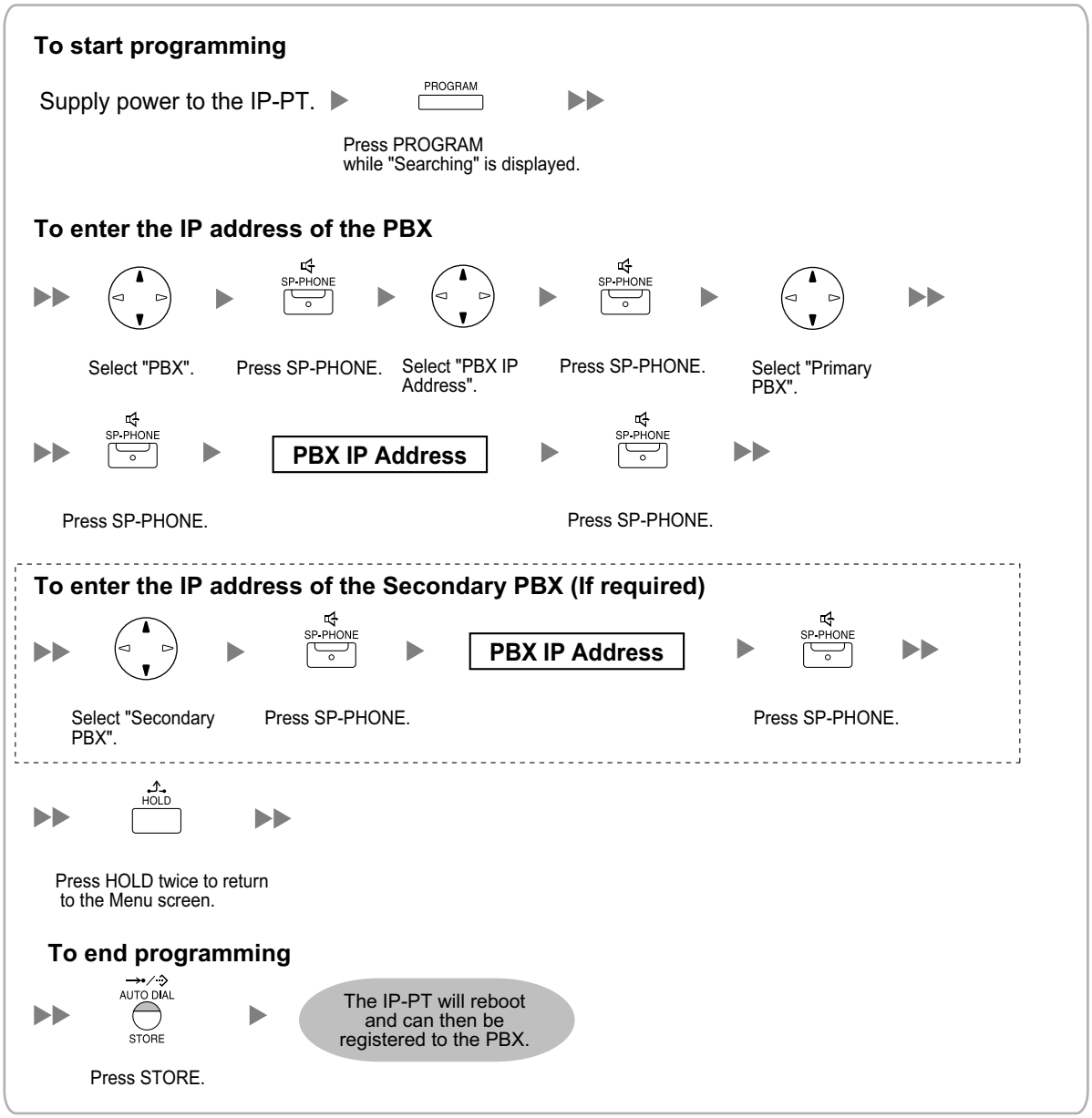
## KX-NT300 series (except KX-NT321) and KX-NT500 series


To start programming
Supply power to the IP-PT.
SETUP
Press "SETUP" when it is displayed.
To enter the IP address of the PBX
For KX-NT300 series: Software version 2.00 or later only
For KX-NT500 series: Software version 1.00 or later only
Select "PBX".
ENTER
Select "PBX IP Address".
ENTER
Select "Primary PBX".
ENTER
PBX IP Address
ENTER
To enter the IP address of the Secondary PBX
(optional for KX-NT300 series [Software version 2.00 or later only] and
KX-NT500 series [Software version 1.00 or later only])
Select "Secondary PBX".
ENTER
PBX IP Address
ENTER
To end programming
Return to the Menu screen.
STORE
Press "STORE".
The IP-PT will reboot and can then be registered to the PBX.

**Note**

The illustrations may differ from the buttons on your telephone.

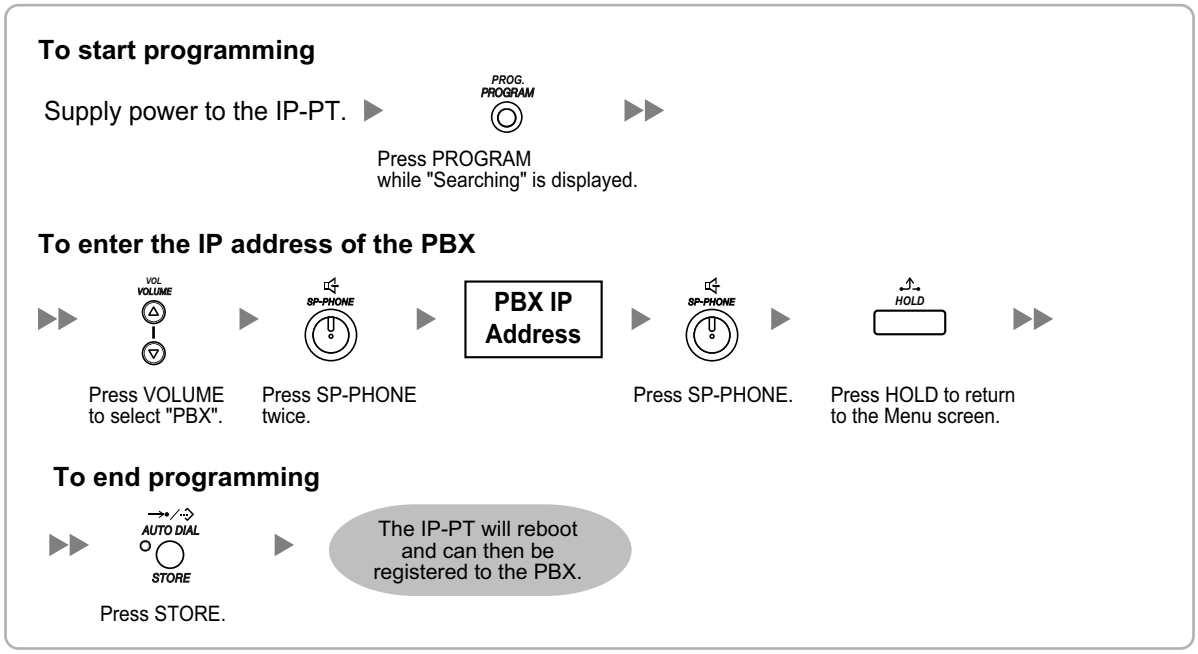
## KX-NT321




**Note**

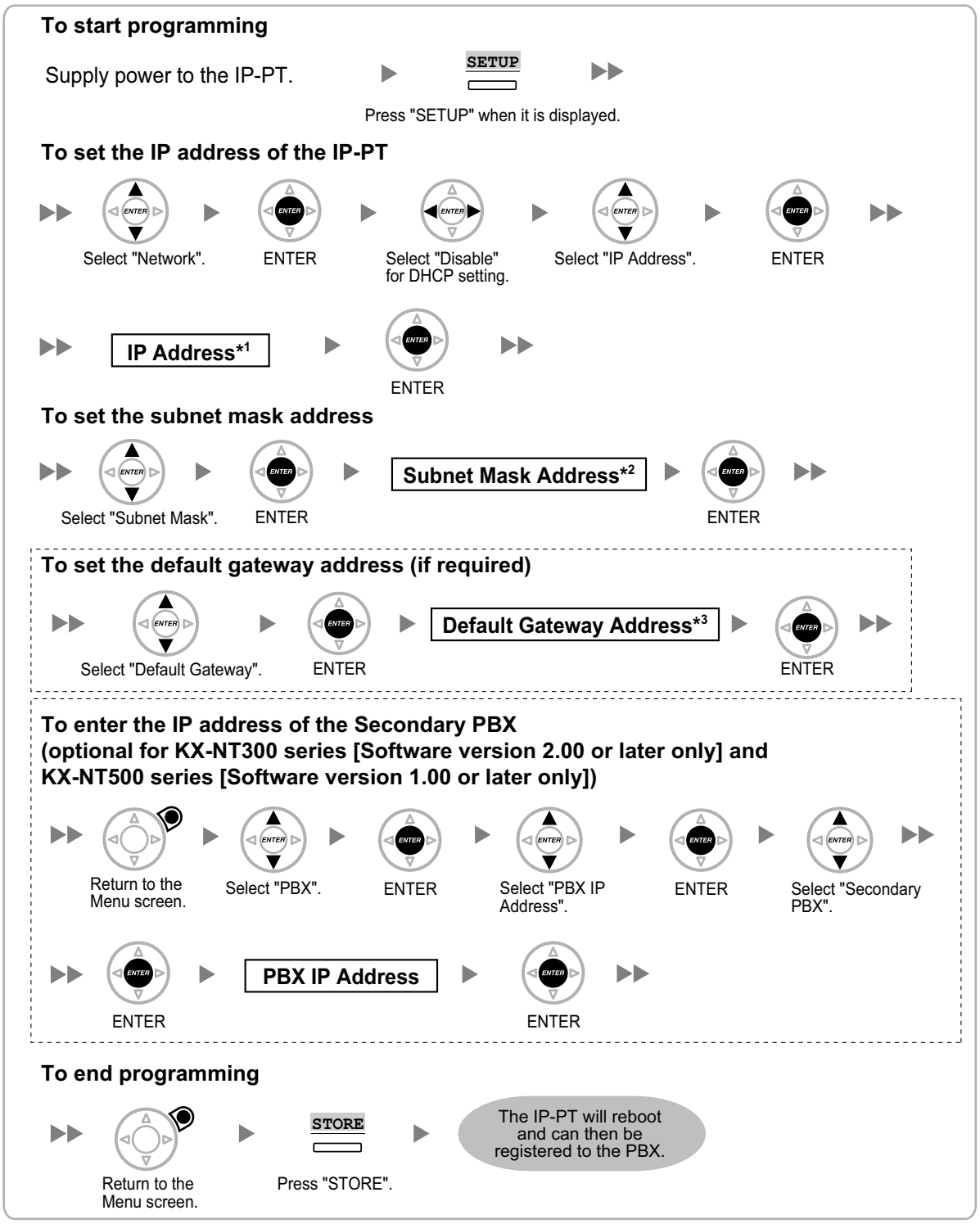
To confirm the connection to the secondary PBX after assigning IP addressing information, (1) turn the IP-PT's power off, and (2) hold the STORE button and **2** key while turning the power on.

### KX-NT265 (Software version 2.00 or later only)




- **Not using a DHCP server (DHCP Server feature or an external DHCP server) when the IP-PT is on the same LAN as the PBX**
  Only the PBX's IP address can be assigned automatically to the IP-PT in the process of being registered to the PBX. For details about registering the IP-PT, refer to "4.3.2 Registering IP Telephones".
  Follow the procedure below to assign the IP address of the IP-PT, the subnet mask address, and the default gateway address manually.

## KX-NT300 series (except KX-NT321) and KX-NT500 series




*1 Valid IP address range: "1.0.0.0" to "223.255.255.255"
*2 Valid subnet mask address range: "0–255.0–255.0–255.0–255" (except 0.0.0.0 and 255.255.255.255)
*3 Valid IP address range: "1.0.0.0" to "223.255.255.255"

**Note**

The illustrations may differ from the buttons on your telephone.

## KX-NT321

### To start programming

Supply power to the IP-PT. ▶ PROGRAM ▶▶

Press PROGRAM while "Searching" is displayed.

### To set the IP address of the IP-PT

▶▶ Select "Network". ▶ SP-PHONE Press SP-PHONE. ▶ Select "DHCP (Disable)". ▶ SP-PHONE Press SP-PHONE twice. ▶▶

▶▶ **IP Address*1** ▶ SP-PHONE ▶▶

Press SP-PHONE.

### To set the subnet mask address

▶▶ Select "Subnet Mask". ▶ SP-PHONE Press SP-PHONE. ▶ **Subnet Mask Address*2** ▶ SP-PHONE Press SP-PHONE. ▶▶

### To set the default gateway address (if required)

▶▶ Select "Default GW". ▶ SP-PHONE Press SP-PHONE. ▶ **Default Gateway Address*3** ▶ SP-PHONE Press SP-PHONE. ▶▶

### To enter the IP address of the Secondary PBX (if required)

▶▶ HOLD Press HOLD to return to the Menu screen. ▶ Select "PBX". ▶ SP-PHONE Press SP-PHONE. ▶ Select "PBX IP Address". ▶ SP-PHONE Press SP-PHONE. ▶ Select "Secondary PBX". ▶▶

▶▶ SP-PHONE Press SP-PHONE. ▶ **PBX IP Address** ▶ SP-PHONE Press SP-PHONE. ▶▶

### To end programming

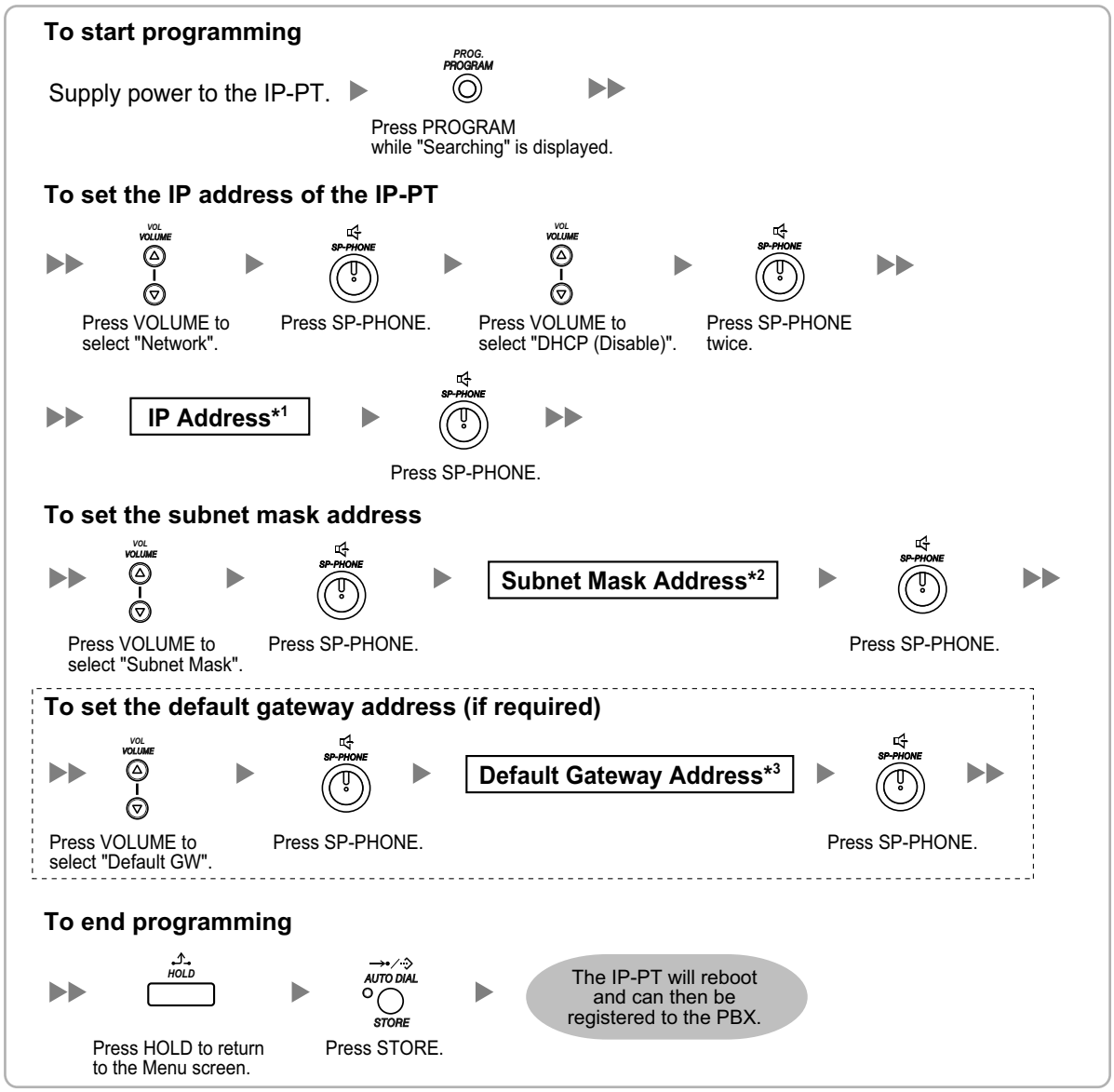
▶▶ HOLD Press HOLD twice to return to the Menu screen. ▶ AUTO DIAL STORE Press STORE. ▶ The IP-PT will reboot and can then be registered to the PBX.

*1 Valid IP address range: "1.0.0.0" to "223.255.255.255"
*2 Valid subnet mask address range: "0–255.0–255.0–255.0–255" (except 0.0.0.0 and 255.255.255.255)
*3 Valid IP address range: "1.0.0.0" to "223.255.255.255"

**Note**

To confirm the connection to the secondary PBX after assigning IP addressing information, (1) turn the IP-PT's power off, and (2) hold the STORE button and **2** key while turning the power on.

### KX-NT265 (Software version 2.00 or later only)



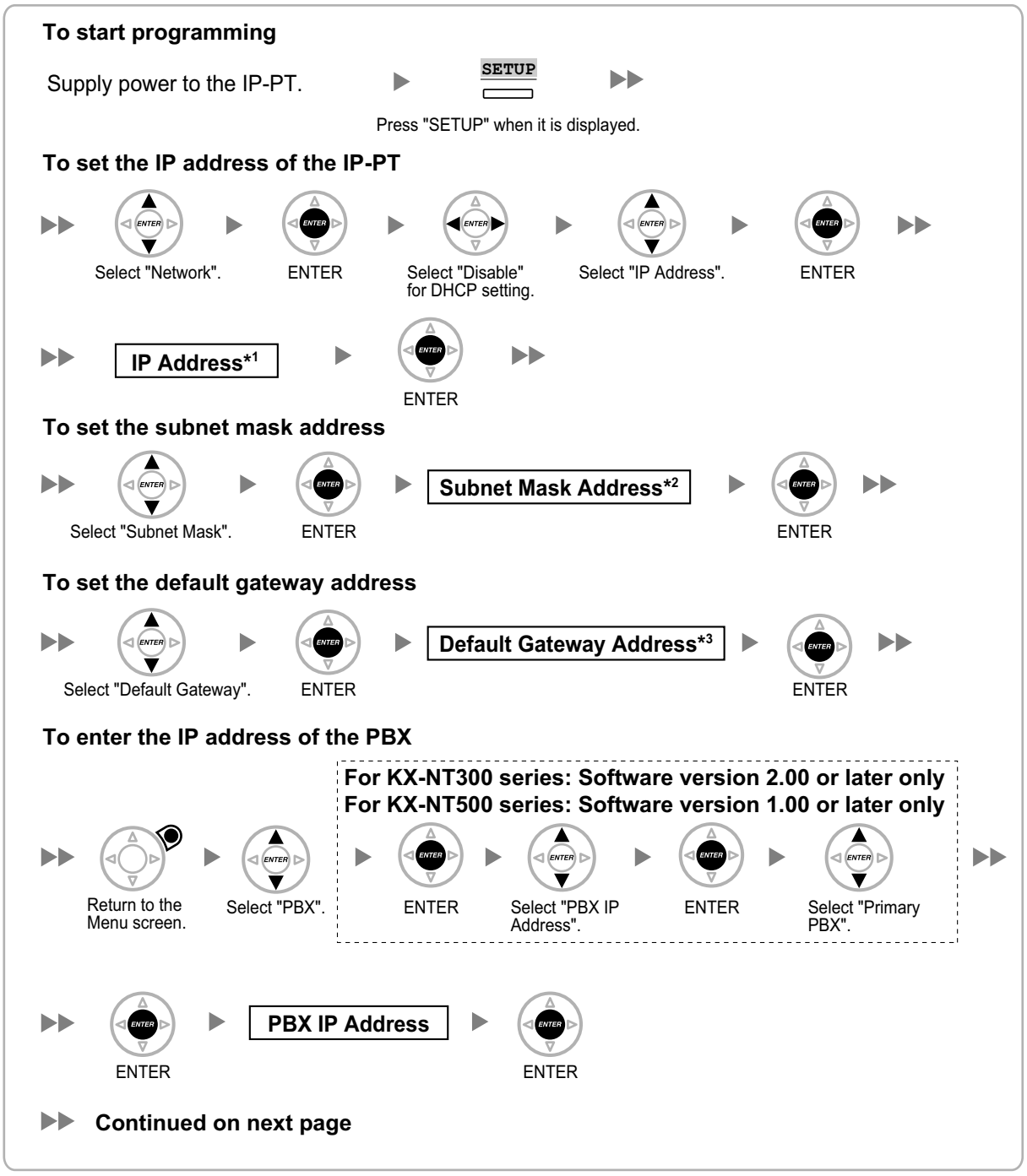

*1 Valid IP address range: "1.0.0.0" to "223.255.255.255"
*2 Valid subnet mask address range: "0–255.0–255.0–255.0–255" (except 0.0.0.0 and 255.255.255.255)
*3 Valid IP address range: "1.0.0.0" to "223.255.255.255"

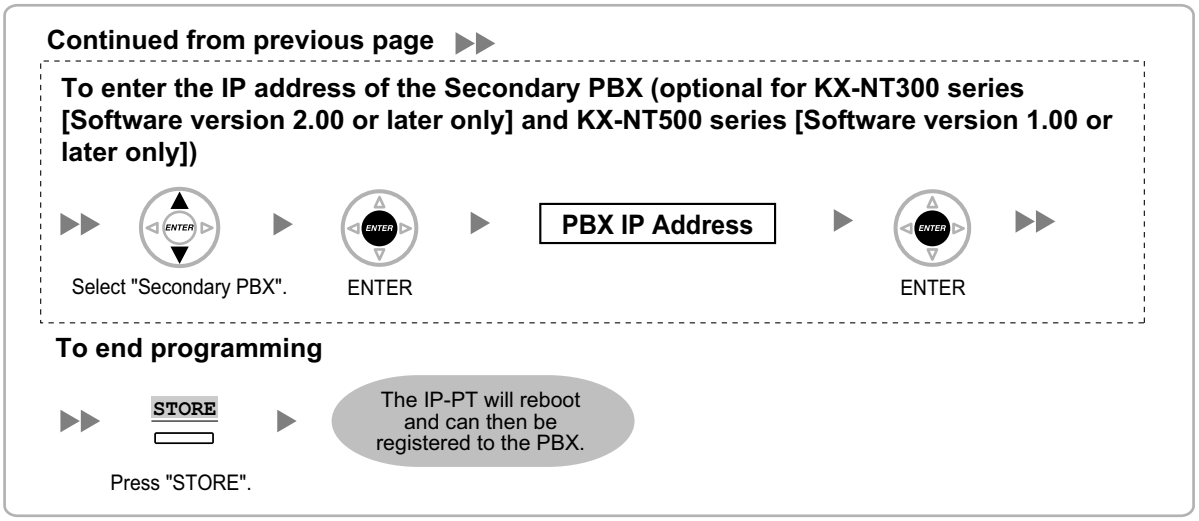
- **Not using a DHCP server (DHCP Server feature or an external DHCP server) when the IP-PT is on a remote office LAN**
  All of the IP addressing information must be assigned manually.
  Follow the procedure below to assign the IP addressing information.

**Note**

By assigning the PBX's IP address to one IP-PT, it is possible to assign the PBX's IP address to other IP-PTs or IP-CSs on the same LAN through system programming. For details, refer to "9.15 PBX Configuration—[1-1] Configuration—Slot—V-IPEXT32—Port Property—Option—◆ ANNOUNCE Mode" in the PC Programming Manual.

## KX-NT300 series (except KX-NT321) and KX-NT500 series

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To enter the IP address of the Secondary PBX (optional for KX-NT300 series [Software version 2.00 or later only] and KX-NT500 series [Software version 1.00 or later only])
ENTER
Select "Secondary PBX".
ENTER
PBX IP Address
ENTER
ENTER
To end programming
STORE
Press "STORE".
The IP-PT will reboot and can then be registered to the PBX.

*1 Valid IP address range: "1.0.0.0" to "223.255.255.255"
*2 Valid subnet mask address range: "0–255.0–255.0–255.0–255" (except 0.0.0.0 and 255.255.255.255)
*3 Valid IP address range: "1.0.0.0" to "223.255.255.255"

**Note**

The illustrations may differ from the buttons on your telephone.

## KX-NT321

### To start programming

Supply power to the IP-PT. ▶ PROGRAM ▶▶

Press PROGRAM while "Searching" is displayed.

### To set the IP address of the IP-PT

▶▶ ▶ SP-PHONE ▶ ▶ SP-PHONE ▶▶

Select "Network". Press SP-PHONE. Select "DHCP (Disable)". Press SP-PHONE twice.

▶▶ **IP Address*1** ▶ SP-PHONE ▶▶

Press SP-PHONE.

### To set the subnet mask address

▶▶ ▶ SP-PHONE ▶ **Subnet Mask Address*2** ▶ SP-PHONE ▶▶

Select "Subnet Mask". Press SP-PHONE. Press SP-PHONE.

### To set the default gateway address

▶▶ ▶ SP-PHONE ▶ **Default Gateway Address*3** ▶ SP-PHONE ▶▶

Select "Default GW". Press SP-PHONE. Press SP-PHONE.

### To enter the IP address of the PBX

▶▶ HOLD ▶ ▶ SP-PHONE ▶ ▶ SP-PHONE ▶ ▶▶

Press HOLD to return to the Menu screen. Select "PBX". Press SP-PHONE. Select "PBX IP Address". Press SP-PHONE. Select "Primary PBX".

▶▶ SP-PHONE ▶ **PBX IP Address** ▶ SP-PHONE ▶▶

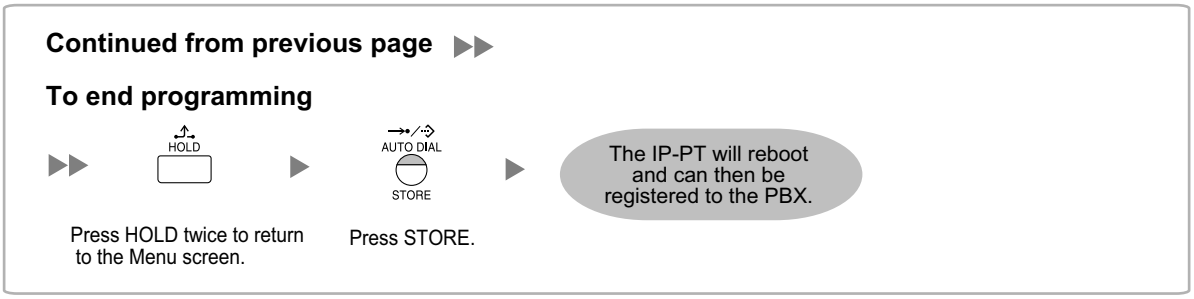
Press SP-PHONE. Press SP-PHONE.

### To enter the IP address of the Secondary PBX (if required)

▶▶ ▶ SP-PHONE ▶ **PBX IP Address** ▶ SP-PHONE ▶▶

Select "Secondary PBX". Press SP-PHONE. Press SP-PHONE.

▶▶ **Continued on next page**


Continued from previous page
To end programming
HOLD
AUTO DIAL
STORE
The IP-PT will reboot and can then be registered to the PBX.
Press HOLD twice to return to the Menu screen.
Press STORE.

*1 Valid IP address range: "1.0.0.0" to "223.255.255.255"
*2 Valid subnet mask address range: "0–255.0–255.0–255.0–255" (except 0.0.0.0 and 255.255.255.255)
*3 Valid IP address range: "1.0.0.0" to "223.255.255.255"

**Note**

To confirm the connection to the secondary PBX after assigning IP addressing information, (1) turn the IP-PT's power off, and (2) hold the STORE button and **2** key while turning the power on.

## KX-NT265 (Software version 2.00 or later only)

### To start programming

Supply power to the IP-PT. ▶ PROG. PROGRAM ▶▶

Press PROGRAM while "Searching" is displayed.

### To set the IP address of the IP-PT

▶▶ VOL VOLUME ▶ SP-PHONE ▶ VOL VOLUME ▶ SP-PHONE ▶▶

Press VOLUME to select "Network". Press SP-PHONE. Press VOLUME to select "DHCP (Disable)". Press SP-PHONE twice.

▶▶ **IP Address*1** ▶ SP-PHONE ▶▶

Press SP-PHONE.

### To set the subnet mask address

▶▶ VOL VOLUME ▶ SP-PHONE ▶ **Subnet Mask Address*2** ▶ SP-PHONE ▶▶

Press VOLUME to select "Subnet Mask". Press SP-PHONE. Press SP-PHONE.

### To set the default gateway address

▶▶ VOL VOLUME ▶ SP-PHONE ▶ **Default Gateway Address*3** ▶ SP-PHONE ▶▶

Press VOLUME to select "Default GW". Press SP-PHONE. Press SP-PHONE.

### To enter the IP address of the PBX

▶▶ HOLD ▶ VOL VOLUME ▶ SP-PHONE ▶ **PBX IP Address** ▶ SP-PHONE ▶ HOLD ▶▶

Press HOLD twice to return to the Menu screen. Press VOLUME to select "PBX". Press SP-PHONE twice. Press SP-PHONE. Press HOLD to return to the Menu screen.

### To end programming

▶▶ AUTO DIAL STORE ▶ The IP-PT will reboot and can then be registered to the PBX.

Press STORE.

*1 Valid IP address range: "1.0.0.0" to "223.255.255.255"

*2 Valid subnet mask address range: "0–255.0–255.0–255.0–255" (except 0.0.0.0 and 255.255.255.255)

*3 Valid IP address range: "1.0.0.0" to "223.255.255.255"

## For KX-UT Series SIP Phones

- **Using a DHCP server (DHCP Server feature or an external DHCP server) to automate the assignment of IP addressing information**
  The DHCP server automatically assigns the IP address of the SIP phone, the subnet mask address, and the default gateway address to the SIP phone.
  The PBX's IP address can also be assigned automatically to the SIP phone in the process of being registered to the PBX. For details about registering the SIP phone, refer to "4.3.2 Registering IP Telephones".

  **Note**

  For information about the DHCP Server feature, refer to "8.1.2 DHCP (Dynamic Host Configuration Protocol) Server" in the Installation Manual.

- **Not using a DHCP server (DHCP Server feature or an external DHCP server) when assigning IP addressing information**
  Only the PBX's IP address can be assigned automatically to the SIP phone in the process of being registered to the PBX. For details about registering the SIP phone, refer to "4.3.2 Registering IP Telephones".
  The IP address of the SIP phone, the subnet mask address, and the default gateway address must be assigned manually.
  For instructions, refer to the documentation of the SIP phone.

  **Note**

  - When the PBX is not in the same network as the SIP phone, the IP address of the PBX must be assigned manually. For instructions on manually setting PBX network information, refer to "Assigning the IP address of the PBX to a SIP phone" in "5.8.1 Assigning IP Addressing Information" in the Installation Manual.
  - When assigning IP addressing information to the SIP phone, do not use the phone's Web user interface programming.

## For Non-KX-UT Series SIP Phones

- **Using a DHCP server (DHCP Server feature or an external DHCP server) to automate the assignment of IP addressing information**
  The IP address of the SIP phone, the subnet mask address, and the default gateway address can be assigned to the SIP phone automatically by the DHCP server.
  The PBX's IP address must be assigned manually on the SIP phone side.
  For instructions, refer to the documentation of the SIP phone.
- **Not using a DHCP server (DHCP Server feature or an external DHCP server) when assigning IP addressing information**
  All of the IP addressing information must be assigned manually.
  For instructions, refer to the documentation of the SIP phone.

  **Note**

  - A SIP phone can only receive IP addressing information from a DHCP server on its own LAN. Therefore, when SIP phones are located on several LANs, a DHCP server is required on each LAN.
  - When the DHCP client function is enabled for SIP phones, simply connect them to the LAN to use the DHCP server. For details about the DHCP client function setting, refer to the documentation of the SIP phone.

# 4.3.2 Registering IP Telephones

After the programming of the PBX and IP telephones is finished (refer to "4.3.1 Assigning IP Addressing Information"), the IP telephones must be registered to the PBX. The procedure for registering IP telephones differs according to the IP terminal registration mode specified during the Easy Setup Wizard. This setting can also be changed in the **Site Property**—**Main** screen of the Web Maintenance Console (refer to "9.5.1 PBX Configuration—[1-1] Configuration—Slot—Site Property—Main—Main—◆ IP Terminal Registration Mode" in the PC Programming Manual). Refer to the following table:

| IP Terminals | IP Terminal Registration Mode | | |
|---|---|---|---|
| | Full Automatic Mode | Extension Number Input Mode | Manual Mode |
| IP-PTs | ✓ | ✓ | ✓ |
| KX-UT Series SIP Phones | ✓ | ✓*1 | ✓ |
| Non-KX-UT series SIP phones | ✓*2 | ✓*2 | ✓ |
| IP-CSs*3 | | | ✓ |

✓: Available

*1 KX-UT series SIP phones will be registered automatically, in the same way as Full Automatic mode.

*2 Non-KX-UT series SIP phones must always be registered to the PBX manually, even if Full Automatic mode or Extension Number Input mode is selected.

*3 IP-CSs must always be registered to the PBX manually. For details about registering IP-CSs, refer to the Quick Installation Guide for the IP-CS.

**Notice**

You can specify an air sync group for IP-CSs after registration only when IP Terminal Registration Mode is set to "Manual Mode".

**Note**

- For KX-UT series SIP phones, the SIP extension password is automatically set to "1234".
- For IP softphones, follow the same registration procedure as IP-PTs.

## Full Automatic Mode

If networking settings have been completed, when IP-PTs or KX-UT series SIP phones are connected to the same network as the PBX, they will be registered automatically. No registration procedure is required.

## Extension Number Input Mode

### For IP-PTs

If networking settings have been completed, when IP-PTs are connected to the same network as the PBX, they will be registered automatically, but extension numbers for the IP-PTs will not be set. Follow the procedure below to register an extension number to complete registration.

1. After completing networking settings, connect the IP-PT to the same network as the PBX. The screen to enter the extension number is displayed on the IP-PT.

2. Enter an extension number.

   **Note**

   When no extension number is entered in this step, the process will time out and the IP-PT will be registered without an extension number.

3. Press **[ENTER]** on the IP-PT.
4. Press **[PAUSE]** or "**EXIT**" on the IP-PT.

### For KX-UT Series SIP Phones

If networking settings have been completed, when KX-UT series SIP phones are connected to the same network as the PBX, they will be registered automatically as same as when they are registered in Full Automatic mode. No registration procedure is required.

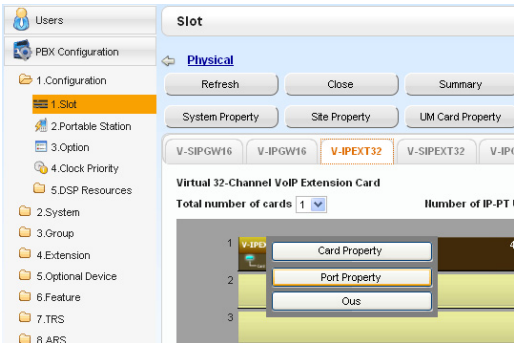
**Note**

- No more than 64 IP-PTs can register extension numbers at the same time.
- If an extension number that is input for an IP-PT has already been set to another extension, registration by this mode will fail.
  Note that some extension numbers are pre-configured to other extensions by default. Avoid using such numbers, or delete them before starting the registration process.

## Manual Mode

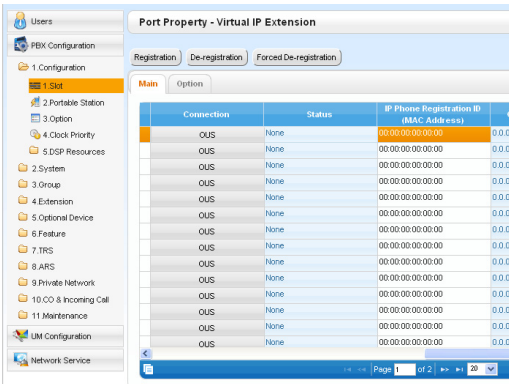
### For IP-PTs or KX-UT Series SIP Phones

After connecting IP-PTs or KX-UT series SIP phones to the PBX over a network, register those IP terminals to the PBX manually.
Follow the procedure below for registration.



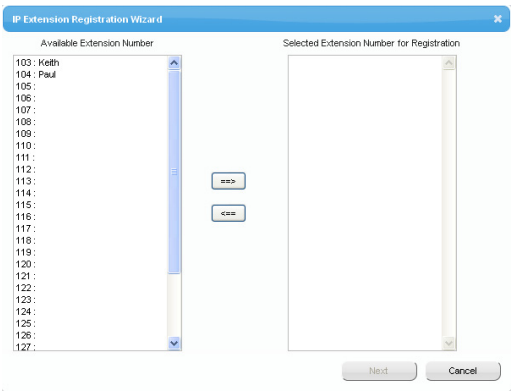

1. **a.** Click **Setup** → **PBX Configuration** → **Configuration** → **Slot**.
   **b.** **For IP-PTs**:
   Click **Virtual** → **V-IPEXT32**.
   **For KX-UT series SIP phones**:
   Click **Virtual** → **V-UTEXT32**.
   **c.** **For IP-PTs**:
   Move the mouse pointer over the **V-IPEXT32** card (Virtual 32-Channel VoIP Extension Card).
   **For KX-UT series SIP phones**:
   Move the mouse pointer over the **V-UTEXT32** card (Virtual UT Extension Card).
   A menu will be shown under the mouse pointer.
   **d.** Click **Port Property**.

**To register the IP-PT or KX-UT series SIP phone by entering the MAC address directly:**




2. If the **Connection** column for the port is **INS**, click **INS**, and then click **OUS** on the dialogue box to change the port's status.
3. Enter the MAC address of the IP-PT or SIP phone in the **IP Phone Registration ID (MAC Address)** box.
4. Click **Apply**.
   Once the IP-PT or SIP phone is successfully registered, its status will update to show "Registered".
5. In the **Connection** column for the port, click **OUS**, and then click **INS** on the dialogue box to change the port's status.
6. For KX-UT series SIP phones only:
   Follow the procedure below to change the **IP Terminal Registration Mode** from **Manual** to **Full Automatic**.
   **a.** Click **Setup** → **PBX Configuration** → **Configuration** → **Slot** → **Site Property** → **Main**.
   **b.** In the **Main** tab, select **Full Automatic** for **IP Terminal Registration Mode**.
   **c.** Click **OK**.

**To register the IP-PT or KX-UT series SIP phone using the wizard:**




2. Click **Registration**.
   A dialogue box will appear. Non-registered (available) extension numbers and names are displayed on the left.
3. **a.** Highlight numbers and names and click the right arrow to select them for registration, and then click **Next**.
   **b.** Click **Next**. A screen will appear with information on the current IP-PT or SIP phone extension number and name, and index number for programming.

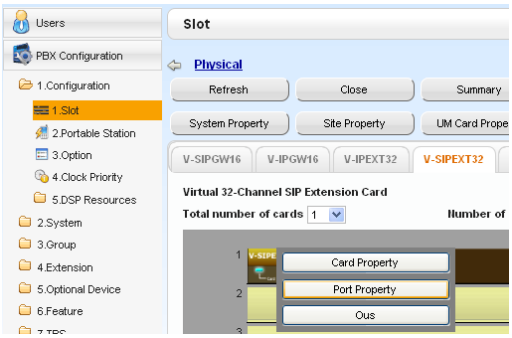
   **Note**

   - If the IP-PT or SIP phone has been connected to the LAN and power has been turned on, the IP address of the PBX will be assigned automatically.
   - If not, connect the IP-PT or SIP phone to the LAN and turn the power on within 15 minutes after this operation is done. The IP address of the PBX will then be assigned automatically.

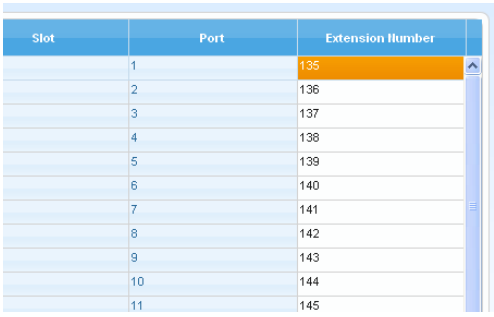
   **c.** If the registration is still in progress, the dialogue box will show "Registration Executing".
   If the registration is successful, the dialogue box will show "Registration Completed". Click **Close**.
   Once the IP-PT or SIP phone is successfully registered, its status will update to show "Registered".

## For Non-KX-UT Series SIP Phones

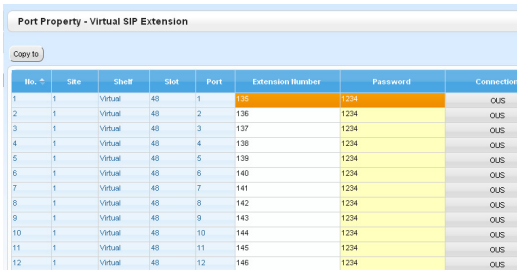
After connecting non-KX-UT series SIP phones to the PBX over a network, register those IP terminals to the PBX manually.
Follow the procedure below for registration.



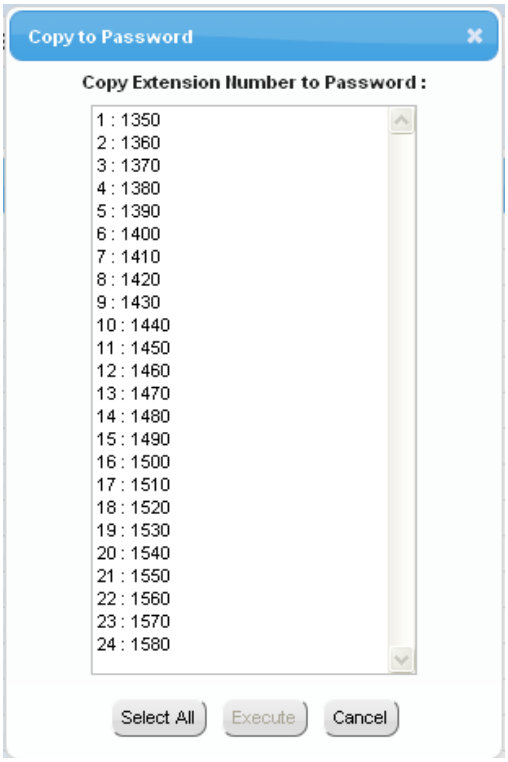

1. a. Click **Setup** → **PBX Configuration** → **Configuration** → **Slot**.
   b. Click **Virtual** → **V-SIPEXT32**.
   c. Move the mouse pointer over the V-SIPEXT32 card (Virtual 32-Channel SIP Extension Card). A menu will be shown under the mouse pointer.
   d. Click **Port Property**.




2. Assign extension numbers to the SIP extensions.
   - If the Automatic Extension Number Set for Extension Card feature is enabled, the extension numbers of SIP extension are automatically assigned. To programme this feature, refer to "9.32 PBX Configuration—[1-3] Configuration—Option—◆New Card Installation—Automatic Extension Number Set for Extension Card" in the PC Programming Manual.
   - If not, enter the extension number for each SIP extension manually.




3. Set passwords for the SIP extensions.
   a. Click the cell in the **Connection** column for each SIP extension you wish to register. The Command Connection screen appears.
   b. Click **OUS**.
   c. Enter a password in the Password box for each SIP extension.
   d. Click **Apply**.
   e. Click the cell in the **Connection** column for each SIP extension to which a password has been assigned. The Command Connection screen appears.
   f. Click **INS**.
   g. Click **OK**.




**Note**

Alternatively, it is possible to set an extension number as a password for each SIP extension automatically.

- In order to set the password automatically, do the following in substitution for step **c** of the procedure above.
  - **a.** Click **Copy to**. A screen will appear with information on assigned extension numbers for SIP extensions.
  - **b.** Click **Select All**.
  - **c.** Click **Execute** to copy each Extension Number to Password.
  - **d.** Click **Yes**.
  - **e.** Click **OK** to return to the Port Property screen.
- When copying extension numbers to passwords, you can also use the icon on the bottom left of the Virtual SIP Extension Port Property screen.

**4.** Programme the SIP extension you wish to register.

**a.** Set the IP address of the PBX, extension number, and password in the corresponding fields for your SIP extension.

**b.** Send a request from the SIP extension to the PBX for registration.

- If the authentication information of the SIP extension and the PBX match, the registration is successful.

**Note**

- When programming the SIP extension, the names of the corresponding fields may differ depending on the type of SIP phone you are using.
- For details about the actual operation of SIP phones, refer to the documentation of the SIP phone.
- For certain SIP phones, you may need to set a Sign-in name, which should consist of the extension number and the IP address of the PBX (e.g., 350@192.168.0.101).

### 4.3.2 Registering IP Telephones

# Section 5

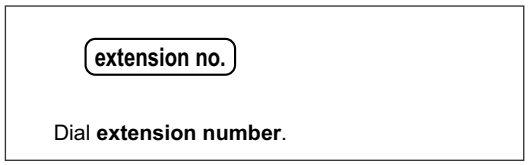
# Confirming the Connection

# 5.1 Making and Receiving Calls

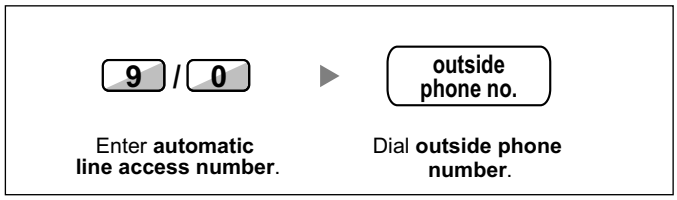
## Making Calls

### To call another extension

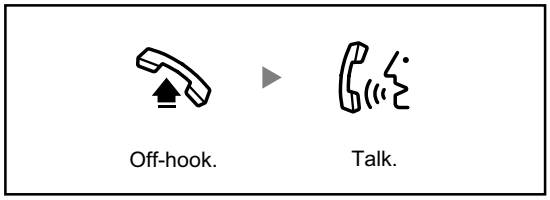
You can call another extension registered with the PBX by simply dialling the extension number.




### To call an outside party




## Receiving Calls



## Notes

CE

The KX-NS1000UK and KX-NS1000NE are designed to interwork with the:

- Analogue Public Switched Telephone Network (PSTN) of European countries
- Pan-European Integrated Services Digital Network (ISDN) using ISDN basic rate access
- Pan-European Integrated Services Digital Network (ISDN) using ISDN primary rate access

Panasonic System Networks Co., Ltd./Panasonic System Networks Company U.K. Ltd. declares that the KX-NS1000UK and the KX-NS1000NE are in compliance with the essential requirements and other relevant provisions of Radio & Telecommunications Terminal Equipment (R&TTE) Directive 1999/5/EC.
Declarations of Conformity for the relevant Panasonic products described in this manual are available for download by visiting:

**http://www.doc.panasonic.de**

Contact to Authorised Representative:
Panasonic Testing Centre
Panasonic Marketing Europe GmbH
Winsbergring 15, 22525 Hamburg, Germany

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